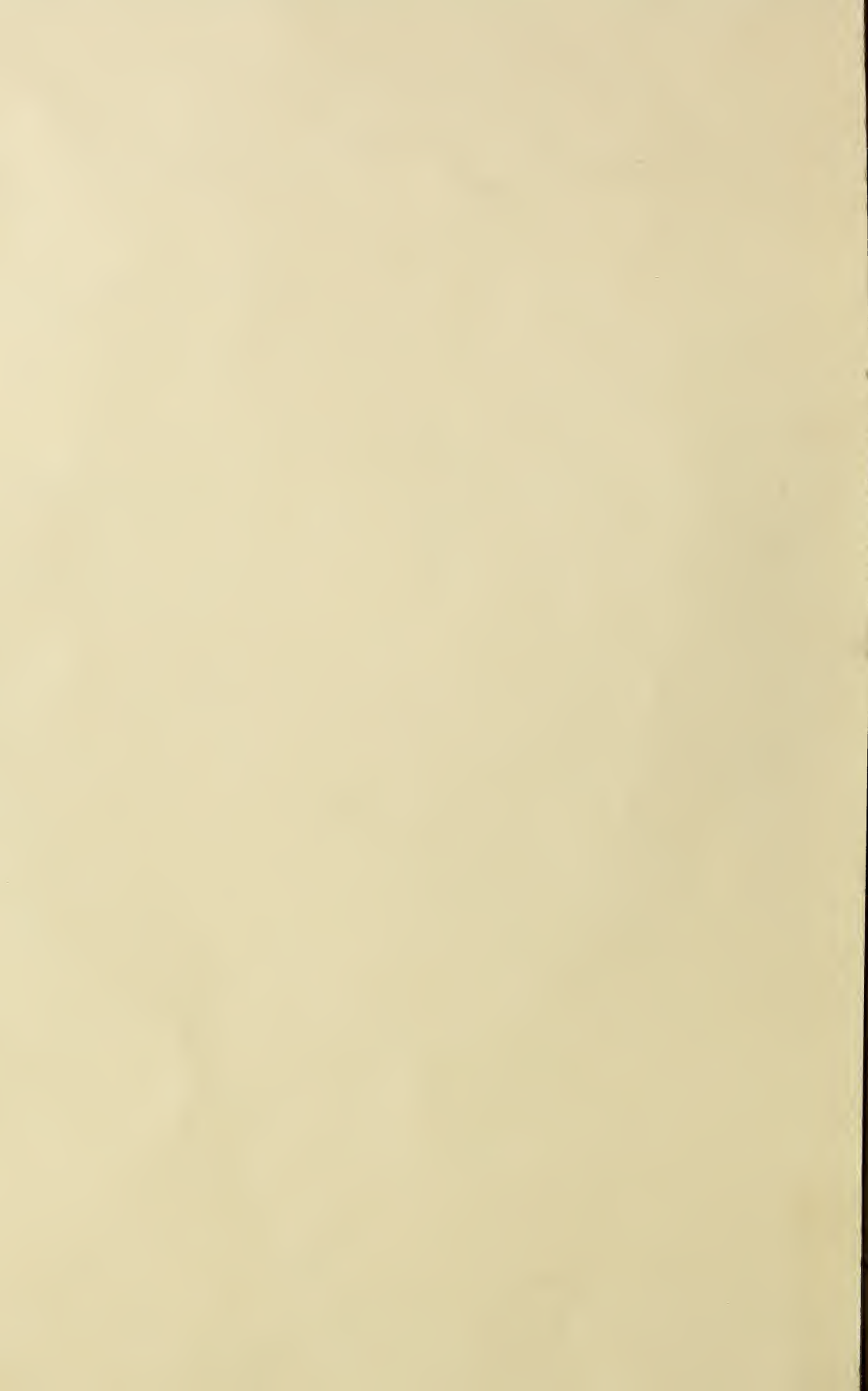


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THE AGRICULTURAL STUDENT

Ohio State University, Columbus, Ohio



V. A. P. Ware, 83, Meeting Francis Wylie, 12, at Farmers' Week.

FEBRUARY 1916

With Farmers' Week Features

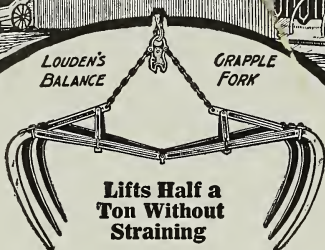
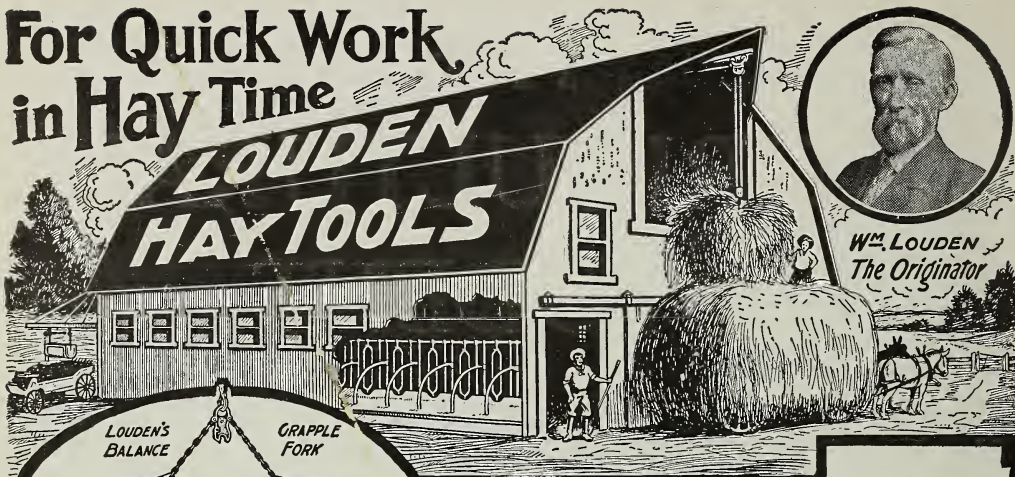
FARM MANAGEMENT DEMONSTRATIONS - G. N. DAGGAR
RURAL ORGANIZATION IN OHIO - - PAUL L. VOGT
CHAMPIONING THE OHIO FARM BOY - W. H. PALMER
BETTER POULTRY AND MORE OF IT - HENRY BROWNELL

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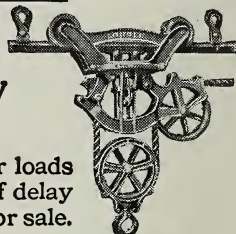


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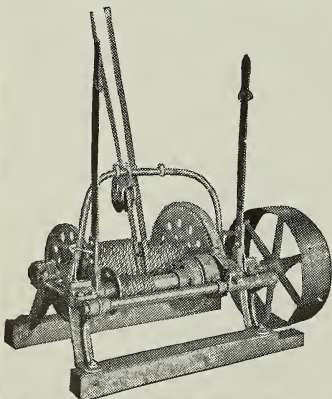


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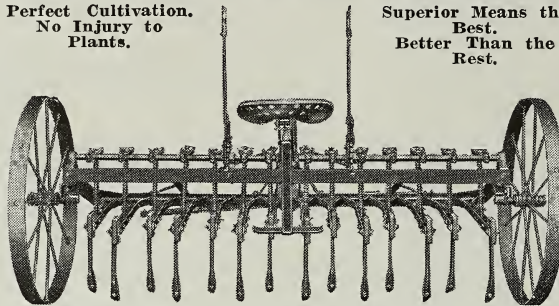
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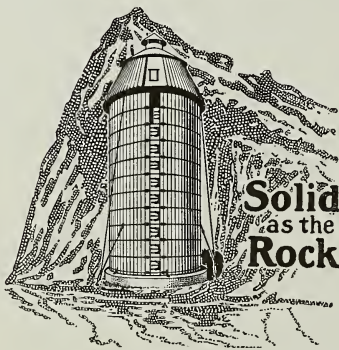
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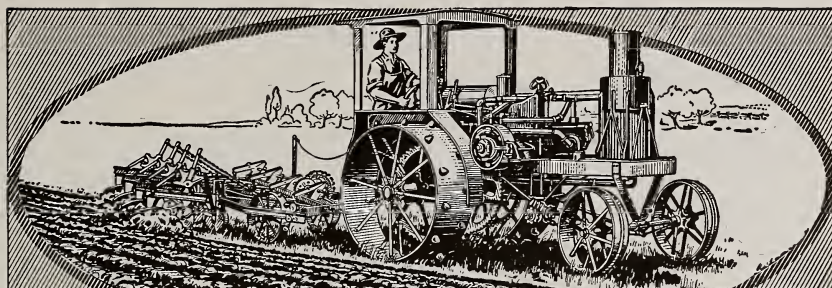
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Avery Tractors are built in sizes to fit any size farm. They have sliding frames, double drives, two-speed gears, low speed heavy duty tractor motors, extra large crankshafts, renewable inner cylinder walls, no pumps or fan.

Prices: They are sold at low prices as follows: 3-Plow Tractor, \$760 cash; 4-Plow Tractor, \$1120 cash; 5-Plow, \$1680; 6-Plow, \$2145; 8-10-Plow, \$2475. Avery "Self-Lift" Plows and "Yellow-Fellow" Threshers are also built in sizes to fit any of above size tractors. We

also build a special smaller size tractor for \$295 cash. All built and backed by an established company owning a large factory and many branch houses which insure permanent and prompt repair and expert service.

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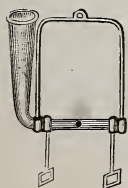
Avery Company, 4851 Iowa St., Peoria, Ill.

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We have the land available to make America the greatest game producing country in the world. Utilize it, and everyone will have more opportunities to indulge in field sports. There will be more shooting for all of us, whether or not we have access to a preserve, because game that is raised for sporting purposes *can not be confined in any restricted area*. Wherever game is intensively cultivated, we find improved shooting in all the surrounding territory.

To anyone who has a small amount of land, game farming will prove profitable. The demands for eggs and for breeding stock is much greater than the supply, and will be for years to come. Pheasant eggs sell today at from \$20 to \$25 a hundred. Live birds bring from \$5 to \$7 a pair.

To those who own large acreage, game farming either provides sport, or profit from those who will pay for sport.

To the city man, it opens the possibility of enjoying good hunting near home.

To everyone who shoots, it brings increased pleasure afield.

Game farming means an addition to our food supply that will be welcome to all.

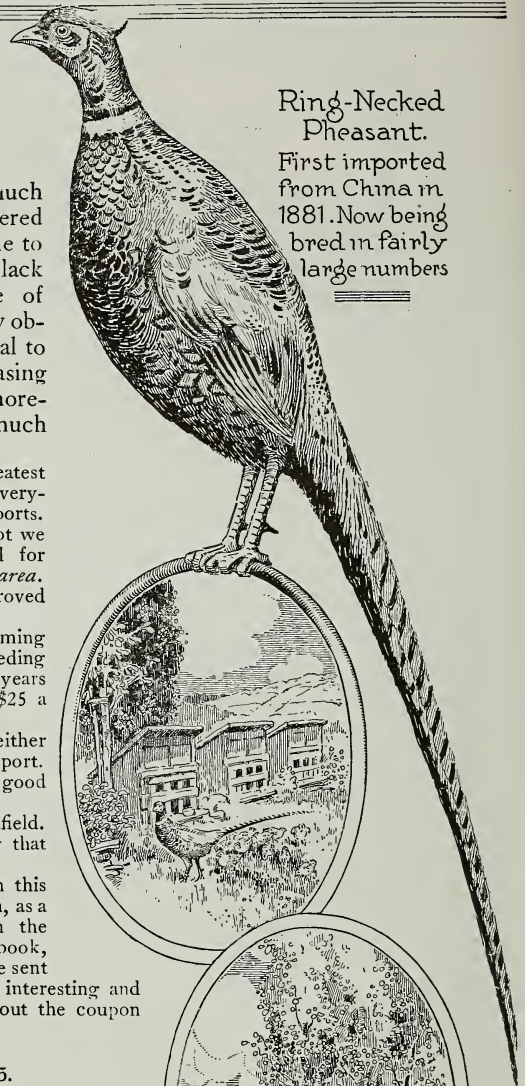
But this subject is too big to be properly treated in this space. If you are interested in it, either as a sportsman, as a prospective breeder, or simply because you believe in the movement as constructive and progressive, write for the book, "Game Farming for Profit and Pleasure," which will be sent to you without cost. It tells of the subject in a most interesting and informative manner. It is well worth reading. Fill out the coupon below and a copy will be mailed you at once.

Game Breeding Department, Room 35.

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Pheasant.

First imported
from China in
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bred in fairly
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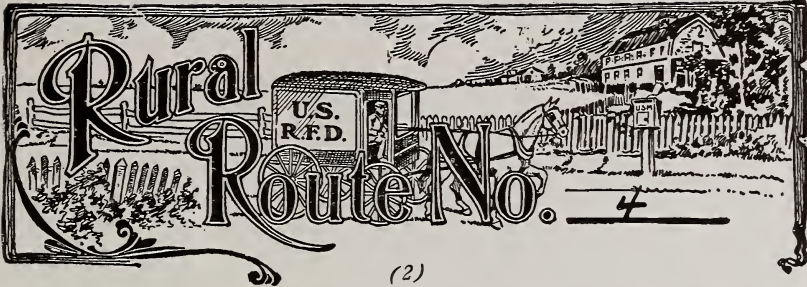
Hercules Powder Company, Wilmington, Delaware

Gentlemen:— Please send me a copy of Game Farming for Profit and Pleasure. I am interested in game breeding from the standpoint of _____

Very truly yours,

Name _____
Address _____

Copy of a Page from Father's Letter



(2)

no rain in October and the wheat is small and does not look like it would stand the winter well.

We finished husking yesterday. From the acre where we tried your theory about bone-meal and clover making the Potash available, we harvested 50 bushels of rather chaffy corn, and from the rest of the field, where we used bone, clover and 50 lbs. Muriate of Potash per acre, we husked out 70 bushels per acre of tip-top corn that is nearly all fit to sell on the ear for seed corn.

I figure that a ton of Muriate of Potash on 40 acres of corn will pay for a year's post graduate study for you and leave you a little spare change to chip in for athletics.

Mother and the girls are going to make a few days' visit to Aunt Sarah's

"Plant Food" is the title of a carefully compiled, comprehensive and scientifically accurate compendium of crop feeding, fertilizer mixing and conservation of soil fertility. Sent without charge upon application.

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"The Leading American Seed Catalog" for 1916, is unlike any other catalog. The front cover, illustrates in nine colors the greatest novelty in Sweet Peas, the unique "Fiery Cross." The back cover shows the two famous Burpee Bantams, Golden Bantam Corn and Blue Bantam Peas. The colored plates, six other Burpee Specialties in Vegetables, and the Finest New Burpee Spencer Sweet Peas; also the New Gladioli, Fordhook Hybrid. This Silent Salesman is mailed free. A post card will bring it. Write today.

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Our weekly Live Stock Report, invaluable to feeders and shippers, sent free upon request. If you care to state what you are feeding for market, special information and advice will be given by letter. Address our nearest office.

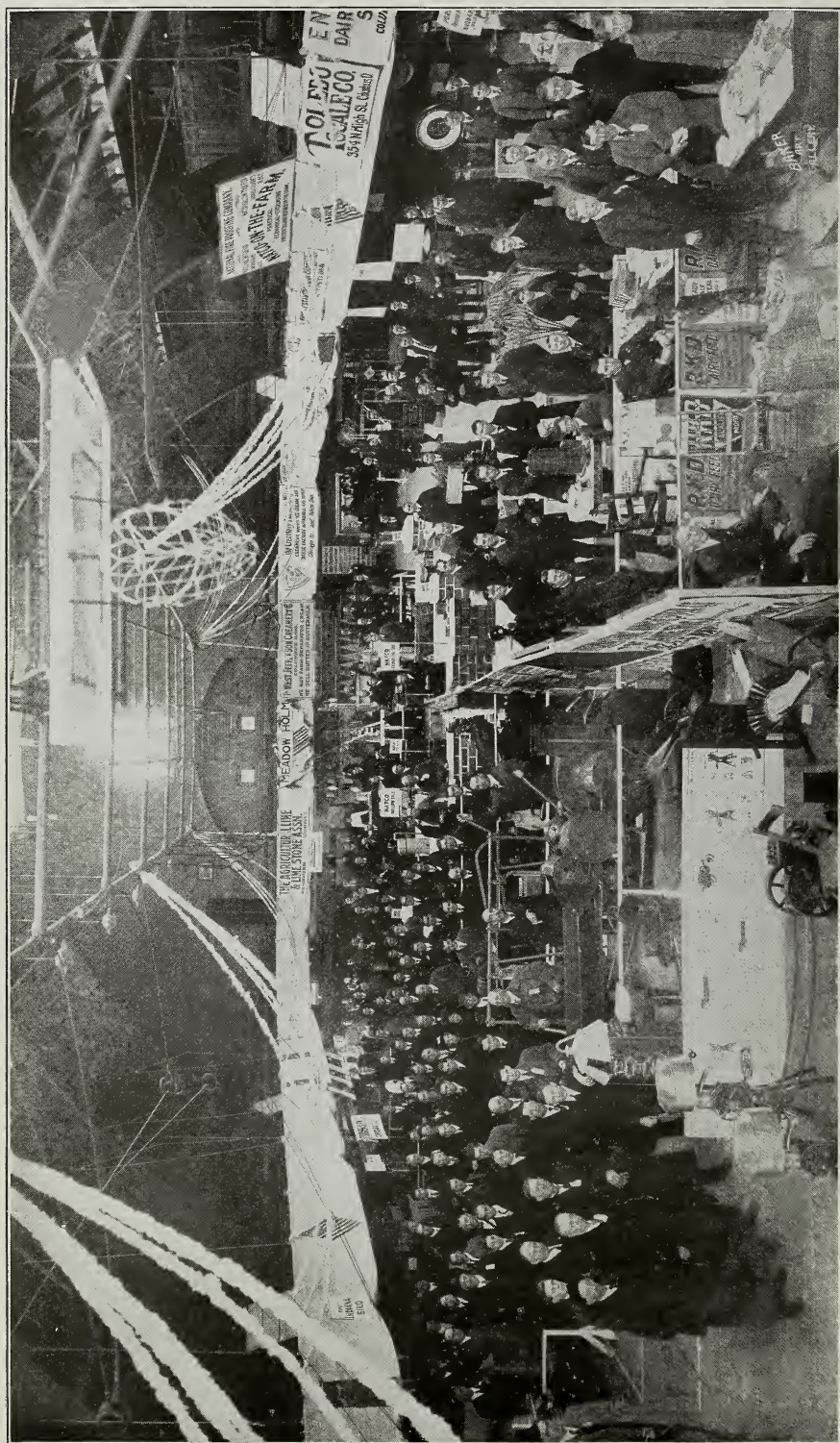
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THE AGRICULTURAL STUDENT

Vol. XXII.

OHIO STATE UNIVERSITY, COLUMBUS, FEBRUARY, 1916

No. 6

FARM MANAGEMENT DEMONSTRATIONS IN OHIO

Latest Form of Agricultural Extension Shows How the Labor Income in Local Communities Can Be Increased by Studying the Relation of Crop Acres, Quality in Livestock, and Crops Yields of Profits.

G. N. DAGGAR, Farm Management Demonstrator, Ohio State University

AGRICULTURAL extension service in farm management began in Ohio in June, 1915, and up to the present time demonstrations have been conducted in five counties. The work is demonstrational, that is, local facts are produced to show what factors make for success on the farm. Thorough investigations by the U. S. Department of Agriculture have determined the various factors influencing profits in farming. These factors vary in different localities under different conditions. The purpose of the farm management demonstration is to set forth these principles as they apply in a particular locality. The aim is not to prove any theories, but solely to demonstrate what investigations have established.

As to method of procedure, the work is conducted under the leadership of some competent local leader, usually a county agent, but not necessarily. The local leader and farm management demonstrator chooses an area which represents uniform soil type and general farming conditions. Also, it should be an area typical of the rest of the county as near as possible. This area comprises about one hundred farms. The local leader prepares the way for taking up the survey, since the launching of the demonstration determines largely the success of the work. This consists in publishing articles explaining the idea

involved in a farm management demonstration. Then individual letters are sent to the farmers in the selected area, informing them that they are going to be visited and that they will be asked for the facts covering a year's business on the farm. It is thoroughly understood that such information is confidential and pertains to no phase of public demonstration.

The local leader visits each farmer personally and secures his record. The farms are not selected, but every farmer is visited and a record secured, providing he is interested and has been on the farm for a year. This record consists of an inventory of all livestock for the beginning and the end of the year, besides an account of all receipts and expenses. The valuation of machinery and buildings is made, in order that a depreciation and interest charge may be made on them.

These facts make it possible to calculate the labor income of the farm. The labor income is what the operator has as a reward for his labor and managerial ability, after deducting all expenses, depreciation and a reasonable rate of interest. Of course, this is not all that the farmer has; his living from the farm, including food, fuel and shelter, amounts to about one hundred dollars per member of the family.

HOW LABOR INCOME IS FIGURED.

Capital invested	\$8360 00
Receipts—	
Crops	\$313 00
Livestock	673 00
Miscellaneous	175 00
Total	\$1161 00
Expenses—	
Current	\$450 00
Depreciation	81 00
Total	\$531 00
Farm income	\$630 00
Interest at 5%	418 00
Labor income	\$212 00

This table is based on an average of 67 farms in a county where a demonstration was conducted. Two hundred and twelve dollars seems to be a small return for labor, but taking \$100 as the contribution to the living of each adult on the farm in this area, we have, besides the labor income, \$370; \$212 plus \$370 plus \$418 interest, makes \$1000. This explanation is made in order that one will not err in comparing a labor income with the salary of a man in the city.

Labor incomes vary among a group of farms. In the areas where demonstrations have been conducted, the range between the lowest and highest labor income has varied from \$1500 to \$5000. This indicates that there are some systems of farm management which pay, while others do not. After the labor income is figured, various factors which appear to be important in the farm organization are calculated, such as crop acres, yield of crops and quality of livestock. These factors are correlated to show their relation to labor income. The average of the whole group, as well as a few of the more successful farms, is made, and each man is returned a report of this with the results on his own farm. The important factors showing their bearing on profits are arranged on charts and presented at a meeting of the farmers in the area where the records were taken. By means of this general dis-

cussion and with his own personal record, each man can compare his farm, item by item, and thus have an opportunity to study his strong and weak points. Usually this report is returned in person by the local leader, who talks over the problems of the individual and the possibilities of change which the comparison indicates to be feasible. Often the farm organization is weak in certain points and strong in others. The idea here is to enable the operator to get a clearer vision of what constitutes a well organized and symmetrical-ly developed farm organization.

The constructive features of the demonstration consist not only in showing the problems, but also in giving the local leader a practical basis for making helpful suggestions. If any manifest an interest in keeping simple accounts, assistance is given in this respect. Then the local leader carries the benefits of the demonstration to the rest of the county. The ultimate goal, of course, is to work out a method of making an adequate analysis of the farm business.

Some tables are given here which show the importance of certain factors in farm organization. The following are the results from a study of 104 farms in a county in eastern Ohio. The size and quality of business are two general features which deserve attention.

1. SIZE OF BUSINESS.**Relation of Crop Acres to Labor Income.**

Crop Acres	Av. Labor Income.	Number Farms.	No. Incomes Over	
			\$500	\$1000
10-36	\$188 00	24	2	..
40-55	421 00	26	8	2
56-70	573 00	28	15	4
70-125	692 00	26	18	9

This table indicates that in general farming a man should be operating at least an average number of crop acres,

in this case 59 acres, if he employs his labor and equipment most efficiently.

2. RELATION OF NUMBER OF ANIMALS TO LABOR INCOME.

Number Animals	Av. Labor Income.	Number Farms.	No. Incomes Over	
			\$500	\$1000
Over 20	\$923 00	23	20	10
14-20	432 00	27	12	3
10-14	377 00	30	10	2
Under 10	222 00	24	3	..

Animals in this table are based upon one cow or horse, the equivalent being two head of young stock, 7 sheep, 14 lambs, 5 hogs, 10 pigs and 100 chickens.

Livestock is an important factor in successful farming in this area. This seems to hold true for the year under consideration, when conditions were very unfavorable for livestock.

3. PRODUCTIVE MAN WORK DAYS AND LABOR INCOME.

Number of Days	Av. Labor Income.	Number Farms.	No. Incomes Over	
			\$500	\$1000
Over 450	\$780 00	29	22	13
310-450	495 00	32	13	2
240-310	372 00	26	9	..
Under 240 ...	81 00	17	1	..

Investigation has determined how many days are required to do the productive work on an average farm under average conditions. This table points out that the farms which call for a larger amount of productive labor, have greater opportunities for success. This does not say that one man works harder than the other. But it tends to show that there is economy and efficiency in coordinating the labor requirements of a farm. In spite of the fact that the great complaint of the farmer is the labor question, still it seems that the man who can manage the other man's labor in connection with his own is more successful.

Quality of Business.

Size of business is unquestionably important, but in company with it there should be quality of business. Where the quality of business is very poor, the less the volume of business the better. A man with a big business and very poor quality is destined to suffer a big loss.

5. RELATION OF CROP YIELDS TO LABOR INCOME.

Yield	Av. Labor Income.	Number Farms.	No. Incomes Over	
			\$500	\$1000
High	\$629 00	35	19	8
Medium	511 00	34	17	5
Low	288 00	55	8	2

There are some factors entering into crop yields over which man has no control. Yet care in selection of seed and proper tillage are items of considerable importance in raising crops. The facts indicate that it is very desirable to be a little above the average as a producer. This is one phase of good management, and the other is the wise disposal of the crops after they are produced.

6. RELATION OF QUALITY OF LIVESTOCK TO LABOR INCOME

On 61 Farms With Over 40 of Receipts From Livestock.

Receipts Per \$100 Feed	Av. Labor Income.	Number Farms.	No. Incomes Over	
			\$500	\$1000
Over 130	\$789 00	20	16	6
100-130	497 00	25	10	4
Under 100....	100 00	16	1	..

An efficient feeder, with efficient livestock, gets results. Some consider a crop worth little because it does not require a direct outlay of cash to produce it. The best market is where all men like to dispose of the product. It behooves all feeders to study the character of the market as furnished by their livestock.

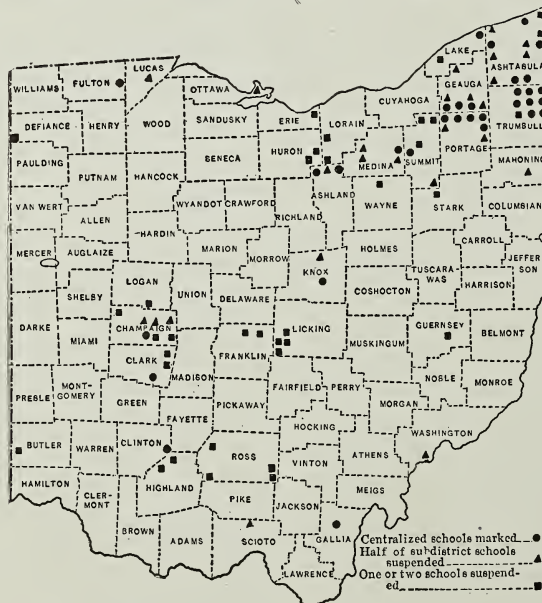
**7. LABOR EFFICIENCY, LABOR INCOME
AND THE NUMBER OF PRODUCTIVE
DAYS' WORK PER MAN.**

Number Days	Av. Labor Income.	Number Farms.	No. Incomes Over	
			\$500	\$1000
Over 265	\$659 00	(32	20	8
210-265	552 00	42	21	7
Below 210 ...	172 00	30	4	..

Some men get more done than others. The man who accomplished 265 days of productive labor out of a possible 312, did not necessarily put in longer hours than the man doing less than 210 days of work. This question of efficient utilization of labor is one worthy of considerable study. At a recent demonstration this one problem aroused keener interest than any other. Every man was interested to learn how efficiently he was employing his labor. It is proper that some concrete facts be produced to show a man his standing in this regard.

With such results as these, the local leader has a yardstick by which the other men in the community may measure their own farms. The reply of

some may be that they know these things already. That is, they say that no new thing has been uncovered. The farm management demonstration sets out primarily to teach and not to discover. It may, no doubt, help the individual to discover his own problem. All these tables illustrate principles well established by investigations. The demonstration brings these principles before a man in the light of his own farm operations and those of his community. It enforces in a concrete and local manner the sound principles of the business organization of the farm. Certain factors bear strongly on success in farming, and there is sufficient local material to demonstrate the importance of these factors in their relation to labor income. Many men keep records, but very few have ever been able to make the interpretations from the records. Every year's record ought to be an asset in the coming year's business. To enable a man to analyze and gather the beneficial lessons from such records is the permanent result hoped for in the farm management demonstration.



**Centralized
Schools
in Ohio,
1905-06.**

Centralized schools marked...
Half of subdistrict schools
suspended...
One or two schools suspended...

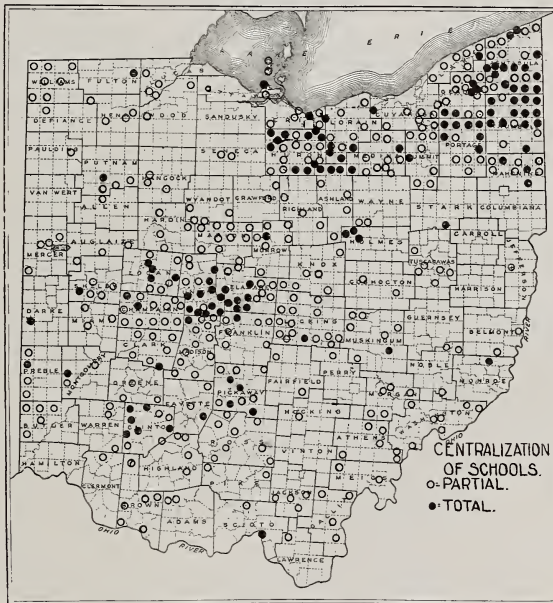
RURAL ORGANIZATIONS IN OHIO

Abstract of Address Delivered During Farmers' Week

PAUL L. VOGT, Department of Rural Economics, Ohio State University

THE formation of state-wide plans of organization of rural interests makes desirable a survey of the different principal types of groups existing and of their extent. The maps presented in connection with this paper and in connection with other contributions to the bulletin are intended to give a perspective of the present status of organi-

passage of recent legislation providing for county and district supervision of rural schools. Maps 1 and 2 show the location of centralized schools, 1905-6 and 1914-15. The most marked advance in centralization has taken place in a wide area running from the northeastern part of the state to the southwest. Comparatively little centralization is



Centralized Schools in Ohio, 1914-15.

zation of some of the principal interests in Ohio. It is hoped that these maps will suggest to community leaders possibilities of increasing social efficiency in the environment where their service is being rendered.

Provision for education is one of the most important types of organization. The marked development during the past few years in rural education has been in the tendency toward centralization of schools. This development has been particularly noticeable since the

found in the southeastern or northwestern sections. The number of centralized schools is rapidly increasing, however, and thus one of the first social problems of rural life is in active process of solution, and the laying of the foundation for rural organization on a community basis is well under way.

Maps 3 and 4 show the distribution of this work during the past year.

Closely allied to the school system is provision for reading. Maps 3 and 4 show the location of the public libra-

ries in the state and the distribution for the past year of the collection of books sent out by the circulating department of the Ohio State Library. The circulating libraries have not been supplied to the same patrons from year to year, so that reading facilities have been provided for at other times in sections not indicated on this map. A few counties have organized county library systems. The great need is for the extension of some system whereby rural districts will have ample reading

rural communities. Of those which have a state organization the Grange is by far the most important. This organization has had a long and creditable history in fostering the social and recreational interests of the open country. It has recently had a remarkable renewal of its growth, 9000 or more new members having been added and 83 new lodges having been organized during the past year.

The industrial side of rural life is now being organized under the direc-



Location of Public Libraries in Ohio.

facilities within convenient distance from every rural home. County superintendents of schools could, in many cases, inaugurate a library system which would reach at least the homes from which children attend school. Other families could be reached through the postal service. Some intra-county adjustment of postal rates might even be secured to encourage the use of public library facilities.

A number of groups whose purpose is primarily social are to be found in

tion of the state leader and county agents, operating under the provisions of the Smith-Lever law. At the present time 13 counties are organized and three counties are in process of organization. The county farm bureau becomes a coordinating agency for all the rural industrial activities of the county and makes possible the efficient organization of the entire community on a basis of the greatest economic efficiency.

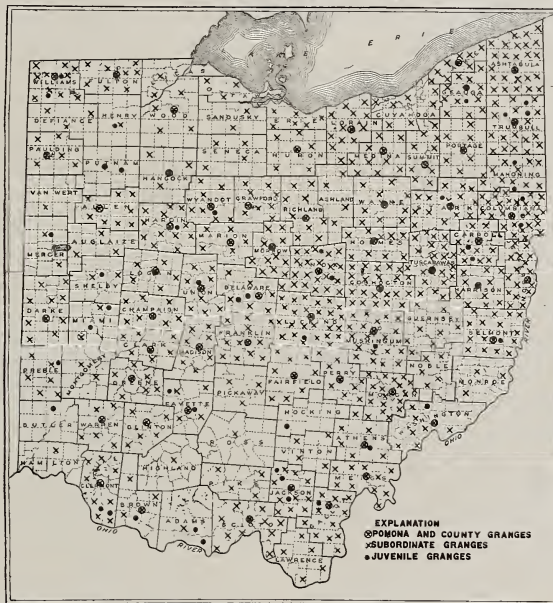
The maps shown in this bulletin present but a partial picture of total rural

organization in Ohio. No recent data are available showing the extent of the cooperative movement, although it is known that over one hundred mutual insurance companies, about thirty-five farmers' grain elevators, at least sixteen creameries, and a number of cheese factories, cooperative stores, fruit and truck growers' associations and a large number of cooperative organizations for the purchase of farm supplies exist. Much of the buying is done in connec-

efforts and to help one another, instead of competing for the possession of a common field.

None of the groups mentioned represents over organization in rural life. Each is based on fundamental needs and represents an interest, the adequate expression of which will yield full returns in greater happiness or a more efficient economic life. The farm bureau secretary, who, through introducing better methods of farm management

THE GRANGE IN OHIO



tion with other organizations, such as the Grange and the Farmers' Union or Protective Associations. Many of the

These maps and charts suggest several things that must be kept in mind in the formation of any state-wide policy of rural organization. There is need for a careful consideration of what the function of each type of organization is and what its relation is to other groups. It is not difficult to find duplication of effort already among the different agencies concerned with the improvement of rural life. The several groups should plan to coordinate their

or in improving marketing, succeeds in increasing the products and profits of the farmer, brings to the community an economic return far beyond the expenses required for his services. The teacher, the minister or the Christian association secretary who succeeds in more efficiently organizing the social and recreational life, brings to the community the more tangible but none the less real returns in higher morality, less social friction and a greater appreciation of the good, the beautiful and the true.

NOTES ON THE OHIO STATE DAIRYMEN'S ASSOCIATION

Dr. A. C. Cooley Urges Cooperation in Fighting Bovine Tuberculosis

D. P. EVANS, '16

WITH the annual meeting of the Ohio State Dairymen's Association held in the Armory of the University during Farmers' Week, it is believed that the total enrollment of the week was enlarged by more than 690. The annual dairy machinery exhibit held in connection with the meetings of the dairy association, occupied the entire main floor of the Armory with more than forty exhibits of cream separators, milking machines, creamery apparatus and engines.

The American Jersey Cattle Club, which generally meets in New York City, Chicago or Indianapolis, opened its first session of their yearly meeting February 1, at 1:30 p. m., in the Ohio Union. M. D. Munn, president of the club, told of the work in promoting the Jersey in the South. He outlined the activities of the club by urging the organization of smaller associations in the states.

The club now has a total of 28 employees comfortably housed in their new \$160,000 building in New York City, and a total of \$25,000 in the treasury, which will be used for developing Jersey interests.

In his address, Wednesday at 11 a. m., H. L. Russell, dean of the college of agriculture, University of Wisconsin, pointed out the dangers of bovine tuberculosis and advised community cooperation in the eradication of the disease.

Thursday was Holstein Day, the chief speakers being D. D. Aitken, president of the Holstein-Friesian Association of America, and John B. Irwin, owner of the world's champion cow, Dutchess Skylark Ormsby. Mr. Irwin empha-

sized the necessity of the combination of care in feeding and selection of the animal in the production of large records.

The afternoon meetings were devoted to a discussion of "Duties of the Manufacturers to the Producers." T. L. Calvert, chief of the dairy and food department, brought out the fact that producers practicing cleanliness with regard to the making of their product received the highest prizes for their output.

"Wherever you find a community devoted to dairying you may be sure to find thrift, peaceable and intelligent civilization," said Governor Frank B. Willis in responding to a toast at the dairymen's banquet, held in the Ohio Union on Thursday evening at 7:30 o'clock, at which 260 attended. "I know of no method of farming that will yield greater returns for the amount of land utilized and still maintain the soil at its original fertility, than that of dairying," asserted the Governor.

N. P. Hull of the National Dairy Union opened the sessions on Friday morning of the week by outlining the fight of the butter interests against the oleo manufacturers. He claimed that the coloration of butter substitutes was pure fraud upon the producer of good butter.

At the business meeting of the association, L. P. Bailey, of Tacoma, was elected president; Peter Small, of Chesterland, vice president, and Prof. Oscar Erf, of Ohio State University, secretary-treasurer.

"The dairy interests of our state are so great that consideration of these in-

terests as to the health of the dairy cow must be given serious thought," said Dr. A. S. Cooley, state veterinarian, in addressing the dairymen Friday afternoon. "The questions of and dangers to public health are also bringing into consideration the health of the dairy animal," he continued.

"About eight percent of deaths from tuberculosis in man are caused by bovine bacilli, most of the victims being children. Raw market milk of the cheaper grades in most cities frequently contain bovine tubercle bacilli. Opinion concerning the importance of bovine infection has fluctuated from Von Behring's theory that all tuberculosis is due to bovine infection, acquired in infancy, to the idea that it might safely be ignored and was even desirable. It seems definitely settled, however, that while the danger from bovine infection has been somewhat exaggerated, it is a distinct menace, and there remains only the question as to how it can best be avoided. It is an amazing fact that, with full knowledge of the epidemiology of tuberculosis among cattle, the disease has not been eliminated in a single instance in this country. The practical difficulties have been too great to be overcome. The disease is so widespread among cattle and the cost of destroying all infected animals so great that the policy is now forming of segregating infected animals and keeping those only slightly affected for limited but definite usefulness. They are entirely suitable for breeding purposes, calves removed from the infected herd at birth showing in after life no evidence of tuberculosis. In Germany the flesh of tuberculosis cattle is marketed and readily sold, proper label being affixed and suitable instructions for thorough cooking being given. In this country there is a growing disposition to permit the sale of milk from tuber-

culosis cows if properly pasteurized and so labeled. The ultimate eradication of the disease among cattle depends on segregation and on making the uninfected animals as resistant as possible by proper stabling, water, food, exercise and fresh air. The analogy between the problems presented by the disease in animals and man, respectively, is too clear to require comment.

"The economic loss to dairymen by diseased animals must force upon us the consideration of this question. Dairymen cannot afford to go on for years paying attention only to pedigrees and other factors in order simply to get a winner, and at the same time lose sight of the health of their animals. True, we are improving the conditions of our barns, giving light, ventilation and good surroundings, but at the same time we are assembling large dairy herds together, getting diseases into them one way or another, affecting greater numbers," stated Dr. Cooley as he went on.

"I wish to make plain to you," he said, "my observations regarding the factors and conditions that tend to facilitate the rapid spread of tubercle bacilli and consequently the spread of tuberculosis. Close stabling and bad ventilation weakens the resistant power of the animals, and thus makes them more susceptible.

"The efficiency of natural forces to spread the virus or danger has been increased in recent years, especially in dairy districts, by the steady increase in cattle traffic. Dealers and dairymen have bought and sold cattle regardless of infection and spreading tuberculosis; they have thus scattered dairy tubercular cattle all over the country, and thus introduced into thousands of herds tuberculosis, where, by nature's method of dissemination of

the danger, it would not have gained entrance.

"Having gained entrance into the herd, the tuberculous cow begins to give off the germs of the disease. The germs escape by the mouth and nose, the bowels, in the milk, and in the discharge of the genital organs; when the germs are being given off in any of these ways the disease is known as open tuberculosis.

"Germs coughed up from the lungs and discharged from the mouth and nose are sprayed over food in front of the cow, or carried in the air for a time until falling to the ground. Cows in the adjoining stalls may take in these germs in the air they breathe, or in the food they eat, and contract the disease. Germs discharged from the bowels are mixed with manure and become dangerous to hogs that are allowed to pick over the dung heap. Manure containing the tubercular germ may easily affect the milk by falling into the milk pail. Besides, when the udder is tuberculous, the milk contains the germs in great numbers.

"Different breeds or types are not the exception by any means when they are subject to the same conditions. Owners of different types should not excuse themselves by thinking their cattle are less liable to have tuberculosis. All cattle owners need to be careful, watchful, constantly exercising the best of judgment in the conservation of the health of the herd, and endeavoring to keep the diseased cow out of the herd with the same earnestness and intense desire as purebred owners are desirous of getting the good type purebred into the herd. These dangers, tuberculosis, abortion, foot and mouth, and many other troubles, care nothing for breeding, purebred, beef or dairy, grade or mongrel."

Dr. Cooley explained that, although

we have a law on the statute books which allows for compensation, little can be accomplished in the way of cleaning up tuberculosis without compulsory testing and slaughter; that much had been done under the present law in the way of establishing the widespread prevalence of the disease, especially in some localities, among purebred cattle; that the economic questions involved and enormous expenditures required in compulsory testing and slaughter would make it unwise because of the widespread character of the disease. "The state, however, can do some things," he said. "We have an act in regard to importation into the state, recently put into action, and vigilance in watching it is necessary."

Speaking of education and legislation, he said: "The fog of ignorance must be cleared away from the farmer buyer. Talk it and demonstrate it at Grange meetings, Farmers' Institutes, other meetings; tell them the dangers of non-regulated dispersion sales; tell them the dangers of buying raw skim milk from the creameries and taking it home and feeding to their calves when such products come from tubercular herds to the creamery; demonstrate the conditions.

In concluding, Dr. Cooley quoted from Governor Hoard's report: "Just as long as this bank of fog exists, it will control all legislation and individual effort to get rid of the difficulty. At the bottom of the matter is a widespread ignorance on the part of farmers as to the danger that threatens them; it is difficult to arouse them out of their conservatism, for as yet all they know about it is talk."

"The conservation of intelligence is vastly different from that which exists because of lack of knowledge. The first demands more light; the latter dreads light."

HORTICULTURAL SOCIETY MEETS AT OHIO STATE

Prof. Wendell Paddock Tells How to Start the Home Orchard

ISAAC P. LEWIS, '17

HOLDING their forty-ninth annual session, the Ohio State Horticultural Society made its headquarters in the Horticultural and Forestry Building during Farmers' Week, where the organization conducted a three-day program in connection with the regular series of lectures offered for the week.

Wendell Paddock, head of the horticultural department, in an opening address on Tuesday, February 1. "This can largely be avoided by dealing directly with one of the many Ohio nurserymen. Another good plan is for the Grange or other farmers' organizations to make up an order for the neighbor-



Where the 49th Annual Meeting of the Horticultural Society Was Held.

The auditorium of the building was used for the lectures, many of which were illustrated, while the drawing room held the apple displays and the horticultural laboratory the exhibits of sprayers, orchard tools and horticultural necessities.

The Home Orchard.

"The man who is planting a few trees only is often bothered by getting trees untrue to name and those that are otherwise unsatisfactory," said

hood and to submit this to various nurserymen for bids.

"When the trees are received they are packed in either boxes or bales. Usually these packages should be undone and the bundles untied when the trees are healed in moist soil. When healing in the roots should be covered at least with a foot of moist earth, and the earth may well extend up to the tops of the trees. Great care should be taken at all times to avoid exposing

the roots to the dangers of becoming dry. They have, of course, suffered a good deal in this respect in the process of digging and packing, and it is up to the planter to see that as little additional exposure is given them as possible.

"When trees are dug it should be remembered that the major portion of the root system is left in the ground, consequently there is an unbalanced condition existing between the root and top. If the trees are to do well, then the tops should be cut back considerable in order to balance up the loss of roots. This is one of the reasons why yearling trees are proving very satisfactory. The tops are not so large, the roots are young, and so easily removed from the injuries.

"The training of the young tree should be started when it is planted, and it should be continued through the first three or four years in order that a stout, compact framework may be built up. If this is neglected, bad crotches may easily be formed and long, naked limbs usually result.

"The farm orchard is usually devoted to other purposes as well as that of fruit growing. It is a handy enclosure for young animals and it is not usually to be expected that such an orchard will receive the best of care. However, one should remember that a tree that is to bear fruit needs plant food, so if cultivation is not given occasionally, applications of manure and mulch materials must be provided.

"It is now no longer possible to grow good fruits without spraying. In fact, in many instances it is impossible to grow trees, since the deadly scale is almost universally present. All the common diseases and insect pests of the orchard may be fairly easily combatted if proper materials are used at the right

time. While scale is responsible for the death of a vast number of trees in home orchards, yet after all it is one of the easiest to combat. All that is necessary is to cover the trees thoroughly with one of the contact insecticides, either lime-sulfur or scalecide. This should be put on late in winter or early spring, just before the buds begin to burst.

"Apple scab is also usually abundant, and where severe the first spray is just when the pink of the blossoms is beginning to show, when the regulated Bordeaux mixture may be used.

"The next thing that usually engages the attention is codling moth. The first spray for this is just after the petals have dropped from the blossoms, using $2\frac{1}{2}$ pounds lead paste to 50 gallons of diluted lime sulfur, the latter being used for scab and other fungous diseases. Ordinarily one or more additional sprays at intervals of two weeks with the same materials will control the ordinary pests of the apple orchard.

"If peach trees and other stone fruits are sprayed with the concentrated lime sulfur during late winter or early spring, they will be freed from scale, leaf curl and possibly some other troubles. In case worms are bad on such fruits they should be sprayed shortly after the blossoms fall with arsenate of lead, $2\frac{1}{2}$ pounds to 50 gallons of water, and again in two or three weeks. It occasionally happens that the crop of stone fruits are seriously injured by rotting. This may be controlled in case the attack is not severe by using a dilute form of commercial lime sulfur, 1-70, commencing perhaps two or three weeks after the blossoms fall and giving two or three sprays at intervals of ten days or two weeks. A better remedy is self-boiled lime-sulfur, which is made by using 15 pounds of unslaked

lime and 50 gallons of water. The sulfur is boiled by the aid of the slaking lime.

"While the combating of all insects and diseases to which the commercial orchard is heir is rather an intricate problem, the owner of the home orchard will find that the production of fine crops of most fruits is not so laborious as the printed page would appear to indicate."

In relating the experiences in five years of orchard fertilization, F. H. Ballou of the Ohio Agricultural Experiment Station, in his lecture on Wednesday, February 2, told of the advantage of nitrogenous fertilizers in rejuvenating old trees. The effects of phosphate and potash had an indirect influence on the orchards in that they caused the

growth of legumes, which in turn supplied the nitrogen deficiencies.

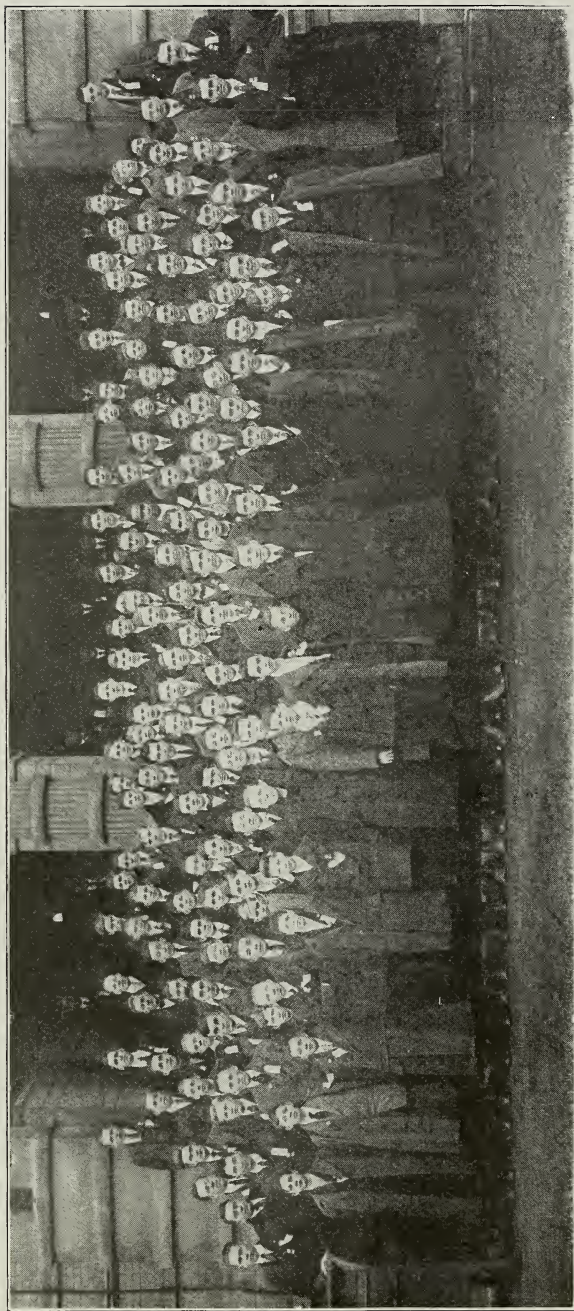
"The exhibit of Ohio apples attracted much attention at the Panama-Pacific Exposition because they were staged in the Ohio space, rather than in the displays of fruits on the grounds," said N. E. Shaw, state nursery and orchard inspector, in speaking of the Ohio products shown at San Francisco.

Cooperation with the nursery man, the seller and the buyer of fruit was urged by almost every speaker.

Officers elected by the society were: President, Norman E. Shaw, Columbus, Ohio; vice president, R. R. Robertson, Norwalk, Ohio; secretary, F. H. Ballou, Newark, Ohio; treasurer, V. H. Davis, Columbus, Ohio.



Judging Draft Horses in the Boys' Livestock Judging Contest Held During Farmers' Week. The Horses Were Furnished by the Department of Animal Husbandry, Ohio State University.



These boys, 126 in all, were the winners in the county judging contests held by the agricultural extension department at county fairs last fall. As a final reward for their merits they were given a free trip to Farmers' Week and an opportunity to compete in the state wide boys' livestock judging contest. Forty-two counties are represented, with three from each county.

CHAMPIONING THE CAUSE OF OHIO FARM BOYS

How the Livestock Judging Contests Interest Country Youths

W. H. PAMER, Contest Director, Ohio State University

IN the fall of 1911 the extension department, in cooperation with the Logan County Agricultural Society, held the first boys' livestock judging contest. In 1912 two of these contests were held; in 1913, 10; in 1914, 24, and

the county. An expert from the college is taken in charge by the county superintendent of schools and the district superintendents, who have previously arranged for meetings in various parts of the county, and in this way prac-



Winners in the Ohio Boys' Livestock Judging Contest.

From Right to Left—Top row: Kenneth Close, Franklin Patten, Raymond Carson, J. Middle row: Albert Arend, Marion Drake, Ernest Shaffer, Ralph Andrew.

H. Smith.

Front row: Floyd Kerns, Lee Robb, Francis Wylie.

in 1915, 46. In no instance has a county failed to hold a contest after starting.

Realizing the great educational opportunity, the University began in 1913 to do some work in coaching the boys during the spring and summer. Interest in this work grew, and last year representatives of the university demonstrated the methods of judging to over 8000. This work is done in cooperation with the school system of

tically every boy and girl in the county is reached during the weeks' stay of the instructor.

Those boys and girls who expected to enter the contest were required to fill out enrollment cards and send them to the University. To these boys and girls bulletins were sent descriptive of the different classes of stock upon which they were expected to work at the county fair. After the boys and

girls had time to read and study these bulletins, a list of ten questions, based upon the subject matter in the bulletins, was sent to them with the request to answer and return. The answers were corrected and graded and returned to the boys and girls. Approximately 3500 boys and girls received this instruction.

At the county fair each boy and girl was required to place, and give reasons for placing, at least three rings of stock. The stock for this work was kindly loaned by the exhibitors, all of whom expressed themselves as being glad to help in the work in any way they could. The work at the county fair was under the direction of a representative from the college.

The prizes for the judging work at the county fair consisted of a free trip to the Ohio State University during Farmers' Week for the three boys who made the best showing. Besides these, each county fair association offered from three to thirty-two prizes, consisting of money and livestock. The amount of money offered was \$1200, and a conservative estimate of the value of livestock prizes offered was \$1000.

Perhaps one of the greatest drawing cards for Farmers' Week was the boys' livestock judging contest, in which 126 boys, all winners in the county judging contests held last fall at the various county fairs, participated.

Arriving in Columbus on Monday, January 31, the boys were immediately divided into six companies, each captained by a county Y. M. C. A. secretary. During the forenoons of Monday, Tuesday, Wednesday and Thursday of the week the companies visited about Columbus, going through the Columbus Dispatch printing plant, the Columbus Packing Company, the Ford Motor Company and the Ohio penitentiary.

From 1 to 3 p. m. of each day was spent in judging livestock at the University.

Four classes of livestock were placed; hogs, draft horses, dairy cattle and beef cattle. Written reasons were made on each ring.

On Thursday at 11 a. m., Governor Frank B. Willis assembled the boys in the University Chapel, and with an address that championed the cause of the Ohio farm boy, presented each of the 126 with a bronze medal, eight with silver medals, four with gold medals and three delegations with banners.

The contests will be enlarged to a greater degree next year, with the idea of including all activities of agriculture and home economics. The cooperation of O. H. Benson of the U. S. Department of Agriculture, leader of the contest work in various states, has been secured, which will undoubtedly aid in extending the contest idea to include many new scopes.

Winners of Contest.

Beef Cattle—

1. Ralph Andrew, 16, Montgomery County.
2. Franklin Patten, 18, Miami County.
3. Albert Arend, 17, Paulding County.

Dairy Cattle—

1. Marion Drake, 16, Darke County.
2. Kenneth Close, 18, Ashtabula County.
3. Francis Wylie, 13, Warren County.

Hogs—

1. Ernest Shaffer, 18, Darke County.
2. Raymond Carson, 17, Union County.
3. J. H. Smith, 16, Putnam County.

Draft Horses—

1. Floyd Kerns, Union County.
2. Lee Robb, Trumbull County.
3. Stanley Gomen, Hamilton County.

BETTER POULTRY AND MORE OF IT

How Extra Profits Can Be Made from the Farm Flock

HENRY BROWNELL, Poultry Breeder, Washington C. H., Ohio

WHEN we first asked the question: "Whether more poultry would be profitable, and could more poultry be marketed?" we thought our general experience in business was enough to show that a constantly increasing quantity of good poultry could be sold at steadily increasing prices. In order to check up our judgment, we prepared three tables showing the quantity of dressed and live poultry sold, and average of both lowest and highest prices on the New York City market for the past twenty years.

As eggs are a necessary product of poultry, we have shown the same table for eggs, giving the price of ordinary good fresh eggs:

DRESSED POULTRY.

Year.	Packages Received.	Price per lb	
		Lowest Average.	Highest Average.
1896	452,442	9.40	16.00
1897	455,907	8.50	16.50
1898	428,291	6.75	16.75
1899	437,773	7.33	21.50
1900	546,761	8.90	13.60
1901	557,459	9.20	14.20
1902	483,073	10.20	15.87
1903	472,288	12.25	18.37
1904	601,006	12.01	17.72
1905	631,054	10.64	19.45
1906	789,990	12.17	17.20
1907	853,241	11.36	18.20
1908	896,189	8.61	18.88
1909	988,818	12.17	20.17
1910	1,003,092	13.40	21.68
1911	1,015,729	12.64	18.87
1912	1,054,121	15.32	19.44
1913	1,082,273	14.75	21.83
1914	1,054,918	15.03	22.50
1915	997,156	15.63	21.27

LIVE POULTRY.

Year.	Cars Received.	Price per 100 lbs.	
		Lowest Average.	Highest Average.
1896	1785	\$ 6.25	\$14.50
1897	2138	5.50	15.50
1898	2089	6.05	16.00
1899	2064	6.18	20.00
1900	2200	6.10	16.50
1901	2047	6.30	17.60
1902	2010	8.24	19.33
1903	1955	8.48	18.88

1904	1911	8.42	21.62
1905	2073	8.98	19.94
1906	2869	8.33	20.15
1907	3055	8.83	19.38
1908	2963	8.51	20.13
1909	2755	10.42	22.08
1910	3488	11.60	20.55
1911	4875	9.26	22.61
1912	5607	10.14	23.24
1913	5806	11.55	22.16
1914	6537	11.85	21.29
1915	6834	11.41	20.66

EGGS.

Year.	Cases Recd.	Per Doz. Av. Price	
1896	2,594,992	15.30	
1897	2,751,833	15.12	
1898	2,642,252	16.14	
1899	2,714,692	19.00	
1900	2,911,818	17.70	
1901	2,964,849	17.50	
1902	2,869,269	20.85	
1903	3,108,534	21.02	
1904	3,363,630	22.66	
1905	3,581,631	22.22	
1906	4,086,151	21.03	
1907	4,426,614	21.74	
1908	4,116,269	22.19	
1909	4,256,320	25.03	
1910	4,377,700	25.30	
1911	5,016,721	21.59	
1912	4,723,558	25.19	
1913	4,666,117	24.83	
1914	4,762,176	26.64	
1915	4,582,218	25.88	

A glance at these tables will show that New York is steadily paying higher prices for larger quantities, both of poultry and eggs.

In 1896 New York City paid \$20,000,000 for 196,000,000 pounds of poultry and eggs.

In 1915 the same city paid \$67,000,000 for 310,000,000 pounds of poultry and eggs.

No one knows the ease with which statistics may be made to deceive more than we do. In order to check up the apparent showing of these tables, we have carefully examined them to see if they tell the truth. It appears upon examination that they not only tell the truth, but that they do not tell the whole truth.

Twenty years ago the art of handling and marketing poultry was crude, as compared to today. The use of refrigeration was just becoming general. Then, poultry was always a perishable article, and therefore limited in its market. Today a properly prepared box of poultry can be transported to and sold in any civilized market of the world. Ships are this day ploughing the seven seas with their refrigerated storerooms containing poultry which was killed and packed in the Mississippi Valley.

Twenty years have lifted the poultry producer from the position of a grower of perishable produce to that of a grower of the world's staple "company dinner," a staple for which the world will always pay.

If you are satisfied with the future market prospect, let us consider the possibility of producing better poultry and more of it.

There have been for many years and there will always be, special poultry farms, raising special poultry in a special way, but it is not these that we will consider.

Let us give attention to poultry on the farm. First, let us consider those farms that have much rough, hilly land that cannot be profitable for the cultivation of ordinary farm crops. Such land is the very best on which to raise turkeys. The turkey is a native of America, and it furnished much food to the early pioneer. It still likes the wild and it thrives best on uncultivated land. As an ever increasing percentage of all land is brought under cultivation, the supply of turkeys is diminishing and the price has been rapidly advancing. There are many acres of rough land in Ohio that are especially adapted to turkeys. If you have such land, take care of the timber that will grow on it and stock the timbered land with turkeys. Here they will thrive

and grow with the least expense and the greatest profit.

While turkeys, perhaps, cannot be grown successfully on farms that are cleared and thoroughly cultivated, other poultry can. Chickens, ducks and geese are successfully raised on the best cultivated farms, and they can, if necessary, be reared in very crowded quarters, but this comes under the head of special poultry farming.

Let us consider the raising of poultry on the ordinary well cultivated and well managed farm. It is here that poultry, with the exception of turkeys, can be raised the cheapest. The eggs can be produced and the young poultry can be hatched and reared with the least expense. Some of the details that must be watched carefully are:

(1) Gather all eggs promptly and take care of them in a cool, dry, dark place, whether designed for market or for setting.

(2) Get the eggs set and the young poultry hatched at the proper time of the year.

(3) Care for the young poultry until big enough to shift for itself.

(4) After the poultry is grown, prepare it for market and sell it with intelligence.

One successful and convenient way is to build small portable poultry houses on sled runners, so that a team can drag them about the farm. Then place these houses where you want the poultry. When ploughing, the houses can be dragged to the field. The poultry will run over the ploughed ground and eat the worms, grubs and any insects that can be caught. If, after the crop is planted, bugs or worms appear, turn the poultry loose and let it eat. In mid-summer the houses can be dragged to the wheat or oat fields after harvest, when the poultry will eat the shattered and lost grain. In the fall

put the houses in the orchards and feed lost and feed the poultry on the fallen fruit and wasted grain. In the late fall, drag the houses close to the barn and feed lots, where the poultry can be easily taken care of and prepared for market. After a flock of poultry has been allowed the range of the farm during the summer, do not think it all ready to market without fattening and preparation. There is, perhaps, no animal on the farm that it pays to fatten as much as it does to fatten poultry.

We have fed poultry equal to 183,178 head for one day. We bought all grain and other feed from feed merchants and paid full market price, in December, 1915. We paid for all labor, and a carefully balanced account of expenses showed a total cost of \$.005514, slightly over one-half cent per day per head. This poultry was on full feed.

This poultry gained weight at the rate of one ounce per head per day, which would be at a cost of less than nine cents per pound. The actual gain in weight paid a good profit, as it was worth more than nine cents. There was a further gain in value because of better quality.

On the farm the same feeding could be done much cheaper, because the feed would cost less. The feeding could also be done with much better gain on the farm, because the poultry could be started into full feed gradually without being disturbed, and with much less liability of sickness than when fed in large quantity away from the farms where produced.

January and February are frequently months when many kinds of work cannot be done on the farm. If young roosters have been caponized during the late summer, they can be fed out and finished in the winter months. It is our opinion that the well finished capon is to become the successor of the turkey as the best bird for roasting. As nearly as we can estimate, it offers one-tenth more food by weight and of so much better flavor, that its sale value is twice that of the rooster, although the original cost is practically the same. Capons are now bringing from \$1.50 to \$2.00 per bird on the farm, and the demand is heavy. In finishing poultry do not feed too long; from seven to fifteen days is the limit of stuffing, such as cost us about one-half cent per bird per day.

FARMERS' WEEK IN A NUTSHELL

Total registration this year, 2892; last year, 1457.

Percent of attendance living on farms—This year, 80; last year, 69.

Average age of men—This year, 39; last year, 39.

Counties of Ohio represented—This year, 88; last year, 87.

Other states represented—This year, 22, last year, 9.

Registration per day—This year: Monday, 1025; Tuesday, 1569; Wednesday, 2122; Thursday, 2714; Friday, 2892.

Total registration for men—This year, 2445; last year, 1196.

Total registration for women—This year, 447; last year, 261.

SKETCHES OF FARMERS' WEEK FEATURES

FILLING the University Chapel to such a capacity that a squad of Columbus policemen and firemen had to be called to turn away an overflow crowd of over 600 people, "Between Two Lives," a three-act play, was presented on Monday evening, January 31, by agricultural students as a part of Farmers' Week program. Every seat in the auditorium was occupied and the aisles were filled when the policemen arrived. All who were not seated were compelled to leave in compliance with the state fire law.

The comedy dwelt with the passing of the old and the coming of the new in rural life. Jack Wilson, a progressive country youth, does not want his father to buy more land, thus increasing his burdens, but to invest the money in improved livestock, home conveniences and drain tile. His father objects to the new role, and Jack leaves home to attend the agricultural college.

Jack studies in the agricultural college while Donald Brooks, who has married Jack's sister, Betty Wilson, works on the college farm and pursues a course in farming at nights, with Jack as his instructor. Gertie Bowers, the teacher of the district school, is loved by Jack, but because of the strenuous life at the Wilson home, has refused to marry him. She attends the Normal School at Cobstown, but hears little of Jack until she meets him at Betty's home the day before Jack is graduated from the college.

Jack and Donald decide to return to the home farm, as Mr. Wilson is no longer able to manage his farm. The boys borrow money from Mr. Watson, drain 40 acres of swamp land, plant it to alfalfa and pay off the mortgage on the farm. They also introduce home conveniences in the home, which they

pay for from the profits of a newly installed dairy.

Mr. Wilson finally agrees that "scientific farming" pays and turns the whole farm over to Jack and Donald. Gertie Bowers, enthused over the teaching of agriculture and home economics, becomes the wife of Jack, and of course Sam Snipes, the hired man, marries Abigail Jones, the country belle, who for some years saw nothing but vileness in all men.

The play presents a rippling comedy throughout. However, the idea that a good knowledge of farming can be gained by careful study and reading is distinctly brought out.

The cast of characters were selected entirely from the college of agriculture. They are: Henry Wilson, a farmer of the old type, Clifford T. Conklin; Sarah, his wife, Arlene Beale; Jack, his son, Tom C. Stone; Betty, their daughter, Mary Roush; Silas Watson, who loans money, Edwin H. Krause; Gertie Bowers, the district school teacher, Dorothy B. Lowe; Will Jefferson, a city youth with good clothes, Aaron F. Head; Trueletta, a colored girl who helps out, Elsie Gay Zinn; Rastus Washington Lincoln, colored hostler of Silas Watson, Theodore J. H. Weigand; Sam Snipes, the hired man, Carl W. Shiffler; Donald Brooks, a son of a neighbor to the Wilsons, Joel S. Coffey; Abigail Jones, who sees vileness in all men, Rhoda M. O'Hara; prison guard, Clarence M. Baker.

Miss Marjorie McCutchen, assistant in English, directed the play.

Charles W. Burkett, '95, editor of *The American Agriculturist*, of New York City, wrote the play some years ago, but witnessed its first production during Farmers' Week.

It is probable that a permanent or-

ganization will be formed in the college, which will select, write and present rural dramas from time to time.

"A PROFITABLE agriculture is the basis of all our prosperity," said President W. O. Thompson to an audience of 700 farmers and their wives and children in his address of welcome to Farmers' Week, Monday,

spect himself has no right to anyone else's respect. Farming will come along just as soon as it puts itself on a business basis. Every farmer is in business for himself and his community, and a good deal of the discontent that arises with the farm is due to a lack of vision as to what it is and what it can do."

He arraigned the farmer for being addicted to the common American habit



Cast of Characters in "Between Two Lives"

From left to right, standing: Edwin H Krause, as Silas Watson; Sidney Bliss, country fiddler; Clifford T. Conklin as Henry Wilson; Clarence M. Baker, prison guard; Carl W. Schiffier as Sam Snipes.

Sitting: Mary Roush as Betty Wilson; Aaron F. Head as Will Jefferson; Miss Marjorie McCutcheon, Director; Arlene Beale as Sarah Wilson; Rhoda O'Harra as Abigail Jones; Dorothy B. Lowe as Gertie Bowers; Tom C. Stone as Jack Wilson.

Front row: Theodore J. H. Weigand as Rastus Washington Lincoln; Elsie Gay Zinn as Truletta, a colored maid.

January 31. "The business phase of farming is one of the most important phases we have to consider in the next decade. A farm that doesn't yield a margin of profit is probably depreciating in value, and one that mortgages the future in consuming itself.

"I should like to see the farmers of Ohio agree pretty generally on putting farming on a self-respecting basis," he continued. "A man who doesn't re-

of keeping what he called "junk," and said that the essential thing for him to do is to rid himself of the habit. "We must get our heads clean first; that is why we believe so fundamentally in agricultural education," was his characterization of education.

He pointed out that the value of agricultural training must be measured by its reaction on the individual farmer. To that end a critical observation of

farm journals was urged. The danger, he pointed out, lies in dealing with generalities and in overlooking the real significance of the experimental work, of which the possibilities have been opened through the agricultural press. In conclusion he said that every farm is an experiment station on a small scale, and that every farmer owes it to himself to keep a check on his work.

He decried the tendency on the part of city men to invest in rural property merely for the sake of investment. He contended that this makes for inflation of real estate values, which is not to the farmer's advantage. That the economic phase of agriculture must be wrought out more fully was his final contention.

CONTRASTING the congestion problems of the city with the isolation of the country, Dean H. L. Russell of the college of agriculture, University of Wisconsin, in his lecture on "Factors That Make for a Better Rural Living," during Farmers' Week, pointed out that the rural districts have been hitherto greatly handicapped by the fact that the ambitious boy has been forced to forsake the country for the city. The economic reward in the past has been much greater in the city, but conditions are rapidly changing in favor of greater rural efficiency.

"Unwillingness to make the expenditures for a better rural efficiency has cost many a farmer his boy," asserted Dean Russell, in speaking of the introduction of labor saving machinery. In this connection Mr. Russell brought out the fact that even where field machinery has been provided, the needs of the housewife have been neglected. "Bath tubs, water systems, suitable lighting systems should go hand-in-hand with gasoline engines, feed grinders and binders," he said. "The in-

terest on the investment for these commodities is much less than doctor bills and the whole equipment can be installed for less than a siege of sickness."

That the shift of population from the country to the city is constantly in progress is shown by the fact that 30 years ago 7 out of every 10 persons lived in the country, but now 5 out of every 10 live in the city or town. The city is drawing the best from the country; the city's gain is the country's loss.

Regarding social conditions, Dean Russell pointed out that the country once developed its own pleasures and diversions. "Raising bees," "house warmings," singing schools and "spell downs" were spontaneous community social events, but now the country has largely abandoned its own sports to chase after the city's substitutes, resulting in distinct social and ethical loss.

"The American farmer has \$1,250,000,000 invested in farm machinery, \$500,000,000 of which has been added during the past ten years," said Mr. Russell, in showing the change in rural conditions was coming about quickly. "However, many a farmer can ill afford to let his hard earned savings serve the banker at a profit when either his own business or his own home is inadequately developed."

"The returns of the farm are enhanced by improvements, the same as in any other business, but there is much antiquated machinery that ought to be scrapped for the introduction of more modern devices will lessen production. The high cost of labor makes it advisable to utilize all the possible labor-saving devices.

"However, the problem is not fully met when the mechanical side of farm life is supplied," continued Dr. Russell,

'for we must utilize the land of our country to a greater extent.' Of all the arable land in the United States, only 43 percent is under cultivation.

In concluding his lecture, Dean Russell emphasized the necessity for the development of farm architecture, the need for home conveniences along with those in the barn. No man should be proud of his cows and apologize for his house," he said.

than he does in the movement of railroad stocks and bonds.

"COUNTY agent work must be educational in that it has a definite relation to the industries of agriculture, and demonstrational in that it presents an element of visual education common today; and it must have, in addition, a large social element," said Dr. A. C. True, director of the state relation ser-



Farmers Leaving University Hall After a Lecture.

In closing, Mr. Russell pleaded for a distinctive title for the farm, because it has a great advantage as a place of business and a home. Because of this double relation there should be a greater degree of permanence than in urban relations, where the business and home are separate. He urged the ultimate condition of development, like the English, where the highest expression of life is seen in the country gentleman, who takes a keener enjoyment in watching the growth of his livestock

vice of the United States Department of Agriculture, before the conference of county agents in the University library, February 1. In speaking of what a county agent should do, he also emphasized the co-operative spirit necessary for a successful organization.

The United States Department of Agriculture deals with this enterprise through its administrative offices and through the agents who go out to aid in the extension work. They are under the states relations service, which also

has to do with the agricultural experiment stations, the teaching of agriculture and home economics in the colleges and public schools and the farmer's institutes, thus including research, teaching and agricultural extension, or all the branches relating to farming and country life. Likewise, the state is a partner in this great co-operative organization in agricultural demonstration through its college of agriculture, or more particularly its state leader and the extension department of the college of agriculture.

The county, through its government or voluntary organizations, deals with the matter in a quite intimate way. Of all these, the county agent is the representative; and therefore, in the opinion of Dr. True, he should have behind him and his work, first of all, a strong organization of all the partners, and especially of the farmers of his county, in order that he may solve their problems. To accomplish this the agent must be an administrative officer effective in organizing and mingling with people, and at the same time he must have the qualities of a good teacher.

In speaking of the things the county agent should not do, Dr. True first mentioned the question of business transactions for farmers. The agent is not to be a representative of any association or group of individuals, since all business must be done through the county bureau or improvement association. He is not to be, in a large way, a demonstrator or lecturer in a strict sense of the terms. While he may explain problems in agriculture, he must get the farmer himself to do the actual demonstrational work of agricultural principles.

Moreover, the county agent is not to

be connected with any political organization, or to be interested in any commercial concern in such a way that he will feel responsible to it. Reference was made to agents selling fertilizer and hog cholera serum as an enterprise outside their province as county officials.

County agent work in the United States started in the southern states as a missionary movement, with agents working on low salaries, but for the general uplift of the poor and the prosperous alike. This movement grew out of such agencies as the agricultural societies of the eighteenth century, the later-day farmers' institutes, the agricultural experiment stations and colleges of agriculture their publications, the farm press and the influence of many successful farmers. The demonstrational idea then culminated with the passage of the Smith-Lever act in 1914, which provides annual appropriations to each state when a like amount is appropriated by the state itself for agricultural extension.

At present there are about 1200 county agents in the United States, mostly in the South. Of these, there are about 400 women agents.

Under the present extension act, the plan of the federal department is to have four or five agents placed in each state annually for the next seven years, when the Smith-Lever act comes to its 1914, which provides annual approximately 2600 agents would be placed, thus leaving but 400 counties which would be nonagricultural in character, without such experts. In this way all the agricultural counties would be placed on a firm basis for the greatest results possible through the extension movement.



OF
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COLUMBUS, OHIO, FEBRUARY, 1916.

EDITORIAL

"Hang the ribbon upon the boy, rather than upon the prize hog or colt that he raises," is the way

CONTEST WORK O. H. Benson of the U. S. Department of Agriculture

would reward the youth of our land for their work in the junior contests. "Give the boy or girl the knowledge that they are doing the merit winning, and that upon them depends the future of American democracy," he urged.

The boys' and girls' contest work has not only proven popular but profitable. It has been the means of instilling in the minds of the farm youth the dignity of labor, the reward for merit, and the knowledge of a better agriculture. Dewey Hanes is looked upon with great-

er favor than the champion basketball player, or the fastest runner upon the track. The winners of the recent livestock judging contest, held at Farmers' Week, have received more publicity in the press than European generals or presidential candidates.

The contest work is definite. It teaches the younger generation the value of money. It creates a desire for supremacy and it allows the boy or girl to carry out his fancies upon the farm. A prize drafter or a fat porker carries with them more real merit than a silver cup or a nicely engraved diploma. May the contest idea develop until all lines of agriculture and home economics are covered in Ohio.

With a total attendance of 2892, Farmers' Week this year surpassed all similar weeks by showing **FARMERS' WEEK** a gain of 100 percent over last year and 400 percent over the short course offered for farmers two years ago. This year every county in the state was represented, which reflects the growing interest of the public in the College of Agriculture. The enrollment from these counties was not bunched, but every portion of the state had from ten to twenty persons remaining for the entire week.

Combining farm lectures with farm conferences allowed many farmers to become acquainted with many organizations with which they formerly knew nothing about. The dairy interests were centered as never before. Beside them were their brethren, the purebred cattle men, the draft horse producers and the swine fanciers. Each group got the conception of the other, and only friendly rivalry existed where before prejudice was prevalent.

The horticultural meetings found their ideal location in the Horticultural and Forestry buildings, where their lectures, their exhibits and their machinery show were all combined.

With the poultry lectures in the judging pavilion, the egg show in Townshend Hall and the poultry buildings for exhibitions, the bird fanciers of Ohio could well be proud of their interests.

It is probable that such a unification of interests along agricultural lines has never been seen before in Ohio. It is true that the Ohio State Fair is a big educational affair, yet there is not the intimate mingling of ideas, the opportunity for discussion and the closer unification of agricultural tendencies as at Farmers' Week.

From now until next years short

course, many people will refer to the facts that they learned at Farmers' week. How often it is that just a little principle or even a few facts lead to the development of greater things, especially on the farm. Ohio farmers stay upon their places of abode too much and let well enough alone. How long would a business man be successful if he look to no features other than that of store or workshop? It is the same with farmers. They will pick up new facts and ideas faster than other men, but their interests being so diversified makes it difficult to provide concrete methods of study. Howevred, Farmers' Week does this.

Meeting and exchanging ideas with 3000 farmers brushes off the rough spots and leaves the rural man ready to put forth his best. He sees greater possibilities for his farm. The problems confronting him are more easily solved. These are a few of the things that Farmers' Week bring out.

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X Perhaps no form of agricultural extension is proving more practical than the surveys being carried on at the **FARM DEMONSTRATIONS** present time by G. N. Daggar in various Ohio counties. In all probability the success of the demonstration is due to the fact that the actual conditions of a community are studied and carefully worked out.

Our experiment stations and colleges can demonstrate the advantage of a special system of farming or a more efficient method of increasing crop yields. Yet, due to diversified communities no methods can be prescribed to show how far and to what extent this method should be carried. It may be more profitable to carry on dairy farming, but what factors enter into the production of milk? Shall a farmer do

nothing but milk cows? Do livestock units have any effect upon his income? Why does his neighbor make more money with less livestock and less labor? Here the work of the experiment station falls short. It, however, fills its function by laying the basis for further work.

Figures do not lie. Neither do they convey the work of the better farmers nor the failings of the less efficient operators alone, as shown by the tables in the leading article for this month. On the other hand, an average is presented which is typical of the whole community. Each neighborhood has its own problems, and what is true in one county may not be true in another. This distinction is brought out by the demonstration, but what is true of the best farmers in one locality can be used with profit by operators in the same neighborhood who have been unable to secure the maximum returns from their land.

Organized to further the growing of better grain seed in our state, The Ohio Seed Improvement Association was formed during Farmers' Week and now stands out as another large association to enhance the future of agriculture.

It is the object of the organization to provide a means whereby a strain of oats or some other cereal selected and found to be so superior that it may be rapidly produced for seed, yet so regulated and kept pure, thus assuring the purchaser of the highest grade.

Exceptionally productive strains of grains have been selected by the Ohio Agricultural Experiment Station, yet at present there is scarcely a place to

grow them. Under the new plan farmers will have the opportunity of getting the new varieties in their own localities and growing them under the direction and inspection of the Seed Improvement Association. This will insure the purchasers that they are getting improved seed and advertise the grower so that a good market for improved varieties will be formed.

Here is an opportunity for real service to agriculture and a promise of financial reward to those who will aid in rendering such service. It is hoped that many progressive farmers will join this association and help in the distribution of better seed for farm crops as it is selected from time to time.

“A rural civilization that will hold men to the soil must be satisfactory materially, intellectually, socially and spiritually to the boys and girls bred on the soil. So long as we think of country life as competitive instead of cooperative we shall never have an ideal rural civilization.

“So long as our children are taught in the rural schools in terms of the city by teachers who, in their secret thoughts, regard the city life as the only life worth living, these children when grown up will prefer the city.

“So long as our religion is taught in abstract terms which the people who need the most blessings of the gospel do not understand, without illustrations from the rural life and by preachers whose ambition is to fill or at least occupy a city pulpit, the vacant pews in the rural church will be in the majority.”

THE SEED ASSOCIATION

Seed Improvement Association was formed during Farmers' Week and now stands

UNCLE HENRY SAYS:

ly, socially and spiritually to the boys and girls bred on the

OFFICERS OF STATE ORGANIZATIONS ELECTED DURING FARMERS' WEEK

OFFICERS OF THE OHIO STATE DAIRYMEN'S ASSOCIATION.

President.....L. P. Bailey, Tacoma, Ohio
 Vice President.....Peter Small, Chesterland, Ohio
 Secretary-Treasurer....Prof. Oscar Erf, Ohio State University, Columbus, Ohio

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 Directors—Lewis Miller, Toledo, Ohio, three years; William Slough, Springfield, Ohio, one year; C. P. Dyar, Marietta, Ohio, two years.



A Corner of the Ohio State Corn Show, Held During Farmers' Week.

FARMERS' WEEK NEWS

AGRICULTURAL ENGINEERING DURING FARMERS' WEEK

"All silos are good silos, and every silo has its place," said M. L. King, agricultural engineer, of Iowa, in an address before 1000 farmers in the Chapel during the first day of Farmers' Week. Mr. King declared that while the stave silo had some faults, that it was the pioneer in the spread of the use of silos.

From data collected from Ohio farmers, the average cost of different types of silos per ton capacity were:

Wood stave.....	\$2.75
Home-made wooden silo....	1.70
Tile silo	4.75
Commercial concrete block..	4.20
Monolithic concrete silo.....	3.90
Galvanized iron silo.....	4.00

Mr. King said that the clay block silo built in Iowa was the forerunner of the vitrified hollow brick silo of Ohio. The Iowa type of silo, however, costs much less than the vitrified blocks in Ohio, since the blocks are but four inches in thickness, as compared with eight inches in common use. This has the effect of higher freight, as well as higher first cost.

Mr. King urged the building of the permanent types of silo, but stated that a wooden silo of one-inch flooring, with home-made wood hoops, was satisfactory. The monolithic silo for the man having easy access to good gravel, and the tile silo for any condition where concrete blocks could not be obtained, were three types of permanent silos recommended. The metal silo, though giving good satisfaction, has had a comparatively short trial.

Attention was called to common failures of silos and their remedy. The chief cause for wood stave silos blowing down is lack of care in properly anchor-

ing the silo and of giving attention to hoops when the silo is empty. The anchor rods should be secured to anchors, at least as far from the base of the silo as the silo is high. It would then withstand the highest wind.

Failures in brick, tile, masonry, concrete or concrete block silos are cracking from lack of sufficient reinforcement, poorly distributed reinforcement or insufficient or badly designed footings or foundations. The remedy for each of the above is apparent. Concrete block silos are sometimes porous, a condition where poorly constructed blocks are used. Lining the silo with hot tar is the practical method for stopping the trouble.

Prof. H. C. Ramsower of the department of agricultural engineering, gave an interesting demonstration of farm lighting appliances on the third day. Prof. Ramsower believes in having some of the good things of life on the farm, including the best artificial forms of lighting.

In convincing style and with ample aid with various lamps and lighting systems, the economy of the newer types of lamps, as compared with the old type flat and round wick kerosene lamps, was demonstrated. Kerosene lamps with mantles, portable acetylene table lamps, gasoline pressure lamps and lanterns and semi-portable gasoline and acetylene plants were featured.

The discussion was continued by C. M. Emerson, agricultural engineer, of Columbus, the following day, "Small Electric Plants" being the subject. The speaker emphasized the fact that a small plant was sufficient for lighting, but where heating appliances were used some care was necessary to get a plant of sufficient size to carry the load.

On the last day, Prof. F. W. Ives of

the department of agricultural engineering, with a topic, "Dont's in Concrete Construction," discussed some of the phases of concrete work where permanence and utility are prime requisites. After defining concrete and its constituent parts, Prof. Ives made a plea for more careful and painstaking work in the selection, proportioning and placing of concrete. That beauty as well as permanence should be sought for was a plea of the speaker.

"HOW to Build and Maintain a Purebred Stud" was the subject of an address delivered by W. S. Corsa, of Gregory Farm, Whitehall, Ill., on Wednesday afternoon, February 2, at the meeting of the Ohio Percheron Breeders' Association. At the beginning of his address, Mr. Corsa mentioned experience as being one of the essential factors in the make-up of a successful breeder of purebred horses.

"If I were asked to name the first requisite of foundation stock, my answer would be soundness," he said. "Following in order of importance would come type, proficiency, and size. It is easier to reach the desired goal in the building of a purebred stud by breeding for size from sound animals than to start with size at the expense of soundness and quality," said Mr. Corsa.

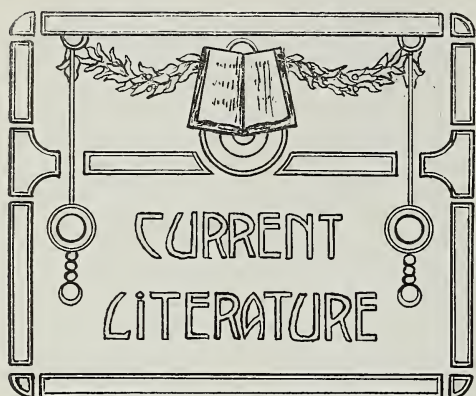
"One of the best ways of getting a start in the purebred business is to buy pair of purebred fillies of the right sort, and from these develop breeding stock. It is cheaper to raise good horses than to buy them," he said,

"and the sire should be of a type similar to that of the mares. The scarcity of desirable sires in many communities is a great handicap to the beginner who lacks the capital necessary to the ownership of a good sire. Mr. Corsa advocated company ownership of a stallion as one of the best and most successful ways of getting a good sire in the neighborhood.

"As to feed, I prefer those producing growth rather than fat, and plenty of good feed is necessary for the proper development of the young colts," said Mr. Corsa. "I like to have the foals come early, for the early foal has many advantages over the late one, especially as a sale or show ring proposition," he continued.

"Selling at an early age is the most profitable to the raiser, and the public sale as a means of disposing of surplus stock is regarded with increasing favor by present day breeders."

Mr. Corsa deplored the practice of disposing of a good breeding stallion because mares of his get are becoming of breeding age, and he advised keeping the tried and proven sire in the community as long as it is possible to use him. Careful and judicious line breeding could be used much more extensively by American breeders than has been done in the past. When an American bred stallion wins the grand championship at the International, American breeders may feel that they have reached a goal worth while, and that they are coming into what is their rightful place as improvers of livestock," he concluded.



“Chemistry and Its Relation to Daily Life” by Kahlenberg and Hart, aims to present the subject matter practical in character and to make it interesting and simple, so that the student may grasp it quickly. While it is adapted for students of agriculture and home economics in secondary schools, there are many others who will find it helpful as a volume of general information for home reading and study. The soil, commercial fertilizers, farm manure, plant life, the animal and its feed, milk products, poisons for farm and orchard pests, etc., are treated in separate chapters. Lists of questions are given at the end of each chapter for the aid of teachers. 400 pages, \$1.25; The Macmillan Company, New York.

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“Plant Life and Plant Uses” by J. G. Coulter is an elementary text book for the study of agriculture, home economics or college botany. The book seeks to give the reader a certain appreciation of the relationship of plant life to his own life. It includes what has the proper place in the education of all young people. It presents a general study of plants which should precede the special study of that subject, and in terms of its largest relation to human life, but the treatment has in view preparation for life in general and not for any particular kind of calling. The

subject is dealt with from the viewpoint of the pupil rather than from that of the scientist or teacher. 480 pages, illustrated, \$1.20; The American Book Company, Cincinnati.

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“Garden Farming,” by Corbett, is a manual of American methods of cultivating vegetables, both in the field and under glass, and should be useful to the agricultural student and to the practical grower. It aims to furnish a concise and authentic statement of the cultural methods successfully followed in the various parts of the United States in the commercial cultivation of vegetables by market gardeners and truck farmers, together with a consideration of the economic importance and botanical status of those methods. The work of marketing, forcing, irrigation and storage of vegetables is based on personal experience. 480 pages, illustrated, \$2.00; Ginn & Co., Boston, Mass.

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“Soils and Soil Fertility,” by Whitson and Walster, teaches how to understand the soil and how to analyze and handle them in a practical manner. The authors have presented one of the most systematic, careful and complete discussions of soils and soil fertility ever published. The text is intended as an introduction to the study of soils. It does not go into unnecessary scientific detail of structure and chemical composition, but discusses in a simple, practical way the best methods of handling the land to produce the best crops. 320 pages, illustrated, \$1.25; Webb Publishing Co., St. Paul, Minn.

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“Principles of Rural Credits,” by Morman, presents the most reliable information on the subject that is available, with a view of establishing a rural credit system for all classes of farmers. It presents the facts in a concise form

not only for legislators who are considering rural credit, but for farmers and the general public. It deals with tenant systems, farm mortgage bonds and national credit systems. 300 pages, \$1.25; The Macmillan Co., New York.

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"Productive Bee-Keeping," by F. C. Pellett takes up all the details which will confront anyone in starting an apiary. It treats of bee-keeping as a side line, the business of bee-keeping, the possibilities of honey production in the country or in the city, tools for the apiary, pasture for bees, the working of the colonies, the drones, the queens, hiving of swarms, methods of feeding young colonies, equipment for honey production, bee diseases, wintering, marketing, and gives a complete outline of all bee literature. The results of many successful bee men and women are presented, with methods of management. Advertising, marketing, grading and shipping of honey is given special attention. 120 illustrations, 300 pages, \$1.50; Lippincott & Co., Philadelphia, Pa.

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"Twenty Lessons on Poultry," by Patterson, presents a neatly arranged course in chicken raising which can be used by pupils in schools or by men expecting to engage in the poultry industry. It takes up the housing, breeds, judging, yarding and fencing, feeds and feeding, mating, incubation, brooding, diseases, care and management. 100 pages, illustrated. \$0.75. J. B. Lippincott Co., Philadelphia, Pa.

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"The Marketing of Farm Products," by Weld, of Yale University, aims to set forth the fundamental principles of market distribution as applied to the marketing of farm products. It begins by pointing out the place that marketing occupies in the general field of eco-

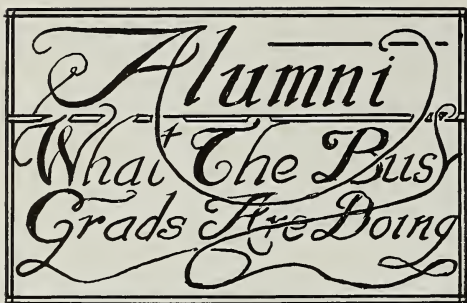
nomics and by applying the accepted principles of economics to the marketing process. It then explains the general organization and methods of marketing, beginning with marketing at country points, and passes to a description of the methods and functions of the various classes of wholesale dealers. After describing the factors affecting the cost of marketing, special problems are treated. 475 pages, \$1.75; The Macmillan Company, New York City.

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"Common Diseases of Farm Animals," by R. A. Craig, professor of veterinary science at Purdue University, takes up the diagnosis and symptoms, as far as possible, of the diseases which trouble farm animals. It presents these under different heads, as diseases of the digestive system, the urinary organs, the generative organs, the respiratory apparatus, the circulatory organs, the nervous system, the skin, the eye, locomotory apparatus, unsoundness and blemishes, diseases of the fore-limb, of the foot, of the hind-limb, and common surgical operations are treated in separate chapters. Parasitic insects, mites, hog cholera, tuberculosis, infectious diseases of cattle and poultry are given special attention. 330 pages, illustrated, \$1.50; Lippincott & Co., Philadelphia, Pa.

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"Household Science and Arts," by Josephine Morris, deals with the best ways to keep a house clean and sanitary, advice in regard to care and preparation of wholesome foods, and the formation of recipes. All the directions within the covers are expressed in simple language. This makes the book easily understood by the young students and saves time and thought for the young housekeeper. 230 pages, illustrated, \$1.00. American Book Co., Cincinnati.



Z. P. Metcalf, '07, is teaching zoology and entomology at Agricultural and Mechanical College, West Raleigh, N. C.

R. L. Shields, '07, is now professor of animal husbandry at Clemson College, in South Carolina. He was assistant in the agricultural extension department, Ohio State University, 1907-1909, and instructor in animal husbandry, 1909-11. He then went to Mississippi as professor of animal husbandry, holding that position until he took up his present work.

J. W. Ray, '13, is teaching high school at Greensburg, Ind.

B. A. Schnell, '13, is county Y. M. C. A. secretary of Union County, with headquarters at Marysville, Ohio.

L. W. Smith, '13, is in the lumber business with his father at Cleveland, Ohio.

J. W. Tullos, '13, is farming at Mt. Vernon, Ohio.

E. O. Williams, '13, is farming at Mt. Victory, Ohio.

G. C. Woodin, '13, is an instructor in the department of horticulture at the Michigan Agricultural College at East Lansing.

H. A. Wise, '13, is employed by the Polk Sanitary Milk Company at Indianapolis, Ind.

F. G. Charles, '13, has charge of the city farms at Cincinnati.

W. S. Courtright, '13, is with the Dayton Pure Milk Company at Dayton.

W. B. Adams, '13, is taking special work in horticulture at the Ohio State University.

M. J. Doherty, '13, is teaching in the high school at Mt. Vernon, Ohio.

T. L. Guyton, '13, is working on a Master's Degree in the department of entomology, Ohio State University.

Carl A. Gearhart, '13, is assistant in the department of agronomy at the Ohio Agricultural Experiment Station at Wooster.

T. A. Rouse, '13, is an instructor in the department of animal husbandry and an assistant in the experiment station at Clemson College, South Carolina.

W. A. Price, '13, is an instructor in the department of entomology at Purdue University.

Ray F. Donnan, '14, is principal of the high school at Perry, Ohio.

Ernest Oliver, '13, is running the home farm at Versailles, Ohio.

H. E. Otting, '13, is with the John Wildi Condensing Company at Marysville, Ohio.

F. C. Marshall, '13, is located at Beaverdam, Ohio, where he is farming.

E. W. McComas, '13, is teaching high school at Woodsfield, Minn.

Wallace L. Love is farming near Lockwood, Trumbull County, Ohio.

Clayton L. Long is an instructor in the department of horticulture at the University of New Hampshire.

Paul M. Logan, '13, is on a farm at Mt. Healthy, Ohio, where he is running an orchard.

Harry M. Jones, '13, is herdsman at the Athens State Hospital Athens, Ohio.

Raymond Jaeger, '13, is bacteriologist for the Belle Vernon Milk Company at Cleveland.

Edwin A. King, '15, and Helen W. Wetmore were married on Friday, February 4, at Vanlue, Ohio. They will reside on a farm at Vanlue, where Mr. King operates a dairy farm.

D. E. Haley, '13, is an instructor in the department of agricultural chemistry at the Pennsylvania State College.

A. J. Bishop, '15, is assisting in the animal husbandry department during the term of the winter course students.

Glenn D. Norton, '14, is an assistant in the dairy department. After March 1 he will engage in farming at Lodi, Ohio, where he will breed Jersey cattle.

Morris O. Bugby, '04, is county agriculturist in Trumbull County, with headquarters at Cortland. After graduating Mr. Bugby engaged in general farming. In 1905 he accepted a position as assistant in the department of cooperation at the Ohio Agricultural Experiment Station. He held this position until 1914, when he became county agent of Trumbull County.

Arthur J. Copeland, '15, is a graduate student in the college of agriculture. He is preparing a theses on "The Renting of Farm Lands in Ohio," and on "The County Agent," under the department of rural economics, and a thesis on "Alfalfa," under the farm crops department.

Adolph Waller, a graduate student in the department of agronomy last year, is now an assistant in the department of farm crops.

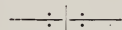
Carl W. Shiffer, '15, is assistant in the department of soils.

A. B. Graham, director of the extension department of the University from 1905 to 1914, is with the state's relation service of the Department of Agriculture at Washington, D. C. He is looking after the agricultural extension schools in the United States excepting those in the South.

O. H. Pollock, '12, is farming at Delaware, Ohio. He is breeding purebred Percheron horses.

Ray C. Doneghue, '06, is now head of the department of agronomy at the North Dakota Agricultural College.

After graduating from Ohio State University with the degree of Bachelor of Science in Agriculture, Mr. Doneghue went to the University of Missouri and received the degree of Master of Science of Agriculture in 1908. He was assistant in the soil survey, Illinois Agricultural Experiment Station in 1906; assistant in agronomy at the University of Missouri, 1906 to 1908; assistant professor of agronomy at the North Dakota Agricultural College, 1908 to 1911. He has been in his present position since 1911.



As an appreciation of the work which Samuel Higginbottom, '10, an agricultural missionary, is doing in Allahabad, India, his Honour James Meston, the lieutenant governor of the United Province of India, made a journey of more than 500 miles to be present at the dedication of a student lodging building at Ewing Christian College, Allahabad.

A letter mailed November 30 announces the dedication of the new building on November 9, 1915. The edifice was built with money raised by Mr. Higginbottom on his return to the United States several years ago.

The lieutenant governor in addressing the people at the dedication warmly praised the work of Mr. Higginbottom, believing that through his efforts India would soon become a land of agricultural skill and science, according to the letter.

Mr. Higginbottom was graduated from Ohio State in 1910. He went directly to India and since has been directing a school of agriculture at Allahabad. He was joined by William Bem-bower, '11, who is teaching horticulture in the college. Clarence A. Dawson, '15, sailed for India last summer to become head of the department of agricultural chemistry of the college.

BOYS' AND GIRLS' CLUB WORK

How Contest Activities Teaches the Business of Farming

O. H. BENSON, U. S. Department of Agriculture, Washington, D. C.

TO teach a child how to earn a dollar as a result of his own investment of time, money and energy is certainly one of the important things in connection with education, and will go a long way to teach the child how to spend the money and may prevent, in after life, the abuse of the possessions of money values or wealth.

The remote results in connection with boys' and girls' club work are perhaps more difficult to enumerate. The effect that this kind of training and direction will have upon the life and practices of the future man and home builder is certainly promising, but somewhat indefinite. The fact, however, that the influence of this work bears upon the thought, conduct and industrial life of the individual through life and influences others all long life's pathway is not the least of importance in connection with the benefits received from this type of work.

Leadership. In every state of the Union there are from one to forty people devoting all of their time to the leadership, organization and direction of the boys and girls into agricultural and home economic activities. In addition to this there are also a score of specialists and natural leaders who assist the state forces in the promotion and reinforcement of the work. These state, district and county leaders are usually paid from funds obtained from a number of different sources—from the Smith-Lever act, from state appropriations, from the United States Department of Agriculture, from the local, county or city government and sometimes from other sources. Prizes, premiums and general awards used in con-

nection with the work are not furnished by the state and federal governments, but are usually supplied by interested individuals, organizations, institutions and commercial concerns.

Relation to Schools. The relation of the boys' and girls' club work to the schools of the state and county should be something like that of the relation of the general extension activities to the larger educational institutions. Surely the legitimate extension work of the rural and village school lies in this boys' and girls' extension work, which is designed to translate the theories of text book and class room into terms of life upon the farm and in the home. It is now generally conceded that it is impossible to teach properly the subjects of agriculture and home economics from text books and class room alone. Definite efforts, therefore, need to be made through this agency of boys' and girls' club work to help the young people to put into immediate practice the truths, experiments and laboratory results, not at the end of the course, but at the end of the day's lesson, or even while the lesson is being taught. Surely, then, every farmer and farmer's wife will be interested in seeing that the school in the village neighborhood makes an effort to thus link up the book and class room education through this extension with the home and the farm life.

Special report and briefs from the field reports in boys' and girls' club work covering the calendar year of 1915 for the Northern Central and Western States:

Massachusetts: One of the many club projects conducted in Massachusetts

during the past year was the 100 day poultry club project. Three hundred and eighty members of this club completed all the work required by the state leader.

The champion of this club member secured 822 eggs from his ten hens during the 100 day period, with total receipts of \$20.55. The work was done at a cost of \$5.59, thus giving him a net profit of \$14.96, or a profit of \$1.50 per hen. The 380 members managed

ters, who met in a social group once a month, and in addition to this studied the follow-up instructions and canning work together, by teams and by groups. The champion Mother-Daughter team canned 88 varieties of canned products. The second highest, 69; third highest, 77. A rural local church was used as a meeting place and as the center for the demonstration work. The Mother-Daughter Club is only one of the many club projects conducted by



Picking the Best in the Livestock Judging Contest, Farmers' Week

for the project period, 5857 hens; total number of eggs laid during the period was 311,280, an average of 53.15 per hen. The total receipts for the 380 members was \$7709.48. The work was conducted at a total cost of \$4057.66, with a net profit of \$3651.82, or an average net profit per hen managed through the contest of 100 days, was 62 $\frac{1}{3}$ cents.

Kansas. The Glenwood Mother-Daughter Canning Club, Leavenworth County, canned during the fruit and vegetable season over 2000 quarts of home-grown products. The club was made up of 11 mothers and 11 daugh-

Mr. Hall of Kansas, who is the co-operative leader representing both the state college and the U. S. Department of Agriculture in connection with this work.

Pennsylvania: Berke County, the champion corn club members. Thomas C. Wilhelm of Bethel made a yield of 100 bushels, from which a net profit of \$54.25. His cost of production was \$20.83.

James Krause of Montgomery County made a yield of 80 bushels of corn per acre with a net profit of \$31. One hundred acres of corn farmed on the

same intensive basis would have made a net profit of \$1300.

Roy Robb of Montgomery County, in his pig club work, showed a gain of 282 pounds in the 175 day period, during which period he made a profit of \$13 on the one pig or hog.

Howard Troxel of Exeter made 70.6 bushels per acre at a profit of \$25.23. It cost him \$29.72 to produce this crop. If farming 100 acres at the same rate, this boy would have made \$2523 in a single summer season.

Amy Latham made 960 pounds of tomatoes in her garden plat, consisting of 1-20 part of an acre, or at the same rate, of 17,200 pounds per acre. Her net profit on this small plat of ground was \$6.50, or at the rate of \$130 profit per acre.

Long Island: A. B. Graham, director of extension work, School of Agriculture, Long Island, employed Mrs. Nellie F. Snyder, formerly a demonstrator in home canning with the boys' and girls' work, to put on a definite campaign in home canning work on Long Island, beginning July 1, 1915. During a period of three months, Mrs. Snyder conducted 93 canning demonstrations with a total attendance of 5517, the average attendance at each canning demonstration being 59. One hundred letters from people who attended the demonstrations and had tried out the recipes, instructions and directions, give definite testimony to the success, not only of Mrs. Snyder's demonstrations and work, but also as to the use of the government's printed recipes and instructions being used in the national home canning club work, and is referred to as the "cold-pack" method of canning, in which all kinds of fruits and vegetables are completely sterilized in a single period of time. Mr. Graham states that not a single report has come from the field from these 5517 people who attended

the demonstrations to the effect that the method was impractical or that they could not succeed with the recipes.

Minnesota: Harold Benner, the champion pig club work member, made a score of 79.9 in the state contest. His pig, from the time the boy took charge of him, showed an average gain of 1.96 pounds per day. During the pig contest the boy's records show that he produced pork at a cost of 3.9 cents per pound.

The Boys' Club at East Grand Forks last year sold between 200 and 300 bushels of seed corn under the 4-H label. A very interesting incident happened in connection with this. The corn had been tested and approved by the local leader. They had such a good sale for their corn that one of the boys got a little too anxious and sold some corn that was not first quality. The rest of the boys found this out and made him feel that if he was to be a member of their club he must sell nothing but the very best. The corn was sold at \$4 a bushel. From report of T. A. Erickson.

Wyoming: Charles Lamberson of Landor, Wyoming, made a yield of 70 bushels of potatoes on one-eighth acre, which was at the rate of 560 bushels to the acre. The one-eighth acre made the boy a net profit of \$80.65.

Clyde Berger of Wheatland, Wyoming, champion of the Pork and Crop Production Club work, and covering a period of 16 weeks of club work. The boy made a net profit of \$5.31 on the one hog at a cost of \$9.53, estimating the value of the hog at market price of 7 cents per pound. The total profit from the boy's one-eighth acre of corn after feeding part of the corn to the hog, was \$10.95.

State Leader I. L. Hobson of Wyoming reports 75 percent of the state enrollment beginning work has completed

all work outlined in the club projects, made out reports, written the story and forwarded same to the state office through the local leader.

North Dakota: The largest yield of corn grown by a club member during the rather backward season was 90 bushels to the acre. The second highest was $83\frac{1}{2}$, the third highest $74\frac{1}{2}$ bushels. This was based on the mature air-dried corn. The state of North Dakota is divided into two sections, northern and southern. The above yields were made in the southern half of the state. The highest yield in the corn club work of the northern section was $50\frac{1}{2}$ bushels, at a net profit of \$75. One hundred and ninety-five club groups in North Dakota not only enrolled, but actually started work representing an enrollment of over 1047. Forty-two percent of them completed all the field work, 282 of them completed all the activities, including exhibits, making out crop records as requested by the state leader. During the year the state leader conducted 85 canning demonstrations, with a total attendance of 4444. Two hundred and fifty-one field and special demonstration meetings were held during the year and 34 club fairs and festivals.

Illinois: The boys' and girls' club work for the state of Illinois was started late in the summer by Mr. James H. Greene. Ten groups of clubs were organized with a total enrollment of 1163 who actually started work. Seventy-

one of these members completed all activities, including making records, writing stories, etc., as requested by the state leader. During the canning season 14 canning demonstrations were held with a total attendance of 1870. Twenty-six other field meetings and demonstrations were held and four fairs and club festivals were conducted. The estimated market value of all club products in the state in the year was \$2554.73, at an outlay of \$977.77. This is exclusive of Cook County work.

The largest piece of club work in the state was done by Superintendent Edward J. Tobin of Cook County, Illinois. Superintendent Tobin has as assistants five country life directors, who lead the educational and club activities of the county. Each country director is in charge of about five townships and is employed for twelve months. Superintendent Tobin has 477 clubs with an enrollment of 4854. Three thousand five hundred and fifteen members completed the work and filed reports with the superintendent. The canning club canned 15,308 cans of fruit and vegetables valued at \$3063. The value of all club products in the county was \$28,507.60. Five thousand dollars was spent for district leaders for follow-up work during the summer season. Superintendent Tobin visited personally on the home plot over half of the entire enrollment in his county during the growing season.

FEBRUARY NEWS NOTES

With talks by members of the faculty, Townshend Literary Society opened the semester Monday night, Feb. 13, with a mixer in Townshend Hall. Professors Paul L. Vogt, Donald J. Kays, Verle C. Smith, J. I. Falconer and Frederick W. Ives spoke. The following officers were elected for this semester: Walter D. Hunnicut, president; Harvey H. Smith, vice president; Rei Duprey, secretary; Harold W. McChesney, treasurer; Ralph S. Christen, censor; Lewis L. Guard, critic.

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Prof. J. Warren Smith, head of the department of meteorology and director of the weather bureau in Columbus, has been appointed chief of the division of agricultural meteorology, a new department of the weather bureau, with headquarters at Washington, D. C. The course in meteorology, which is the only course of its kind in the country, will probably be discontinued, according to Dean Alfred Vivian of the Agricultural College.

Prof. Smith was president of the Ohio Academy of Science during the past year and was master of the University Grange for two years. He is a member of the newly organized Ohio State Scientific Society and is director of the division of climatology at the Ohio Agricultural Experiment Station at Wooster. He is considered the leading authority in the country on agricultural meteorology. He is a member of Sigma Xi, honorary scientific society.

Innovations in the weather bureau service which are due to Professor Smith's work in Columbus are the telephone service, by which weather reports can be obtained by calling any telephone exchange in the state, the issuance of warnings of cold waves to deal-

ers in perishable fruits and the flood-warning service. Before coming to Columbus in 1898, Professor Smith served as head of the New England and the Montana divisions of the weather bureau.

Professor Smith has been connected with the university for the last fifteen years. He served as special lecturer in meteorology from 1900 until 1909, when he was transferred to St. Louis by the weather bureau. The following year, at the request of the University, he was moved back to Columbus, assuming the position of professor of meteorology at the University in addition to his duties with the weather bureau.

The purpose of the new division of agricultural meteorology at Washington will be to study the effect of climate on plants and to continue investigations which Professor Smith has started regarding the effect of rainfall and temperature on the final yield of crops. The weather bureau will work in cooperation with agricultural experiment stations.

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"Some farmers, and especially some farmers' sons, have the misconceived idea that people of the cities regard them with contempt. Consequently they feel mistreated and become discontented," said Prof. William L. Graves in his lecture on "Country Life and the Poets," before the winter course students in the Horticultural and Forestry Building. "The truth is that the importance of country life has been dignified and made immortal by the greatest American and English poets."

Professor Graves spoke of the inferiority of New York City in social importance as compared to the great wheat fields of the Western states, and

emphasized the fact that there would be no great cities if it were not for the country.

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"Our Favorite Sires" was the subject of the round-table discussion of the Saddle and Sirloin Club at the judging pavilion, Feb. 16. Prof. Charles S. Plumb of the department of animal husbandry presented a plan to the club for the financing of a new sheep building, as there is already a sum of \$500 raised for that purpose.

A short business meeting was held and the following men were elected to office for the next semester: President office for the present semester: President, Walter D. Hunnicut; vice president, H. B. Marshall; secretary, William M. Montgomery; treasurer, Earl S. Santee. Plans have already been started for a horse show in the spring.

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Prof. Arthur G. McCall has resigned as head of the department of agronomy, after serving in that position ten years. He will leave the University at the close of the present collegiate year to take charge of investigation work at the Maryland Agricultural Experiment Station. In addition, he will deliver a series of lectures each year at Johns Hopkins University, Baltimore, where he held a fellowship during his leave of absence last year.

The Maryland Experiment Station, the oldest in the country, has a special appropriation from the state for the study of soils, in addition to the regular

federal allowance. Professor McCall is interested in research work which he has begun at Ohio State. In addition, he will direct graduate student work.

Professor McCall was graduated from the University in 1900 and for four years after graduation was employed in the United States bureau of soils in Washington. He was editor of The Weekly Lantern in his senior year, being one of the few agricultural students who have held that position. He is a member of the American Association for the Advancement of Science and of the American Society of Agronomy. He has written several textbooks and a number of papers dealing with his researches.

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The largest class ever initiated into any Grange at one time was that installed by the University Grange at the Horticultural Building, Wednesday, February 9. The class comprised 200, secured as the result of a membership campaign carried on several weeks ago. Among the number were 50 girls.

Both the first and second degrees were given, and the third and fourth will be given at a later date. The team from Canal Winchester Grange was in charge of the work. L. J. Tabor, master of the State Grange, and other officers will be present when the remaining degrees are given. Thomas D. Phillips of the department of rural economics, is master of the University Grange.

Facts for Feeders

Year by year Hogs are the most profitable crop on the average farm. Most years corn is the cheapest and best home-grown feed. There is a Bumper Crop of corn this year, much of it is soft. Soft corn makes poor pork and **Expensive Gains**, but Soft Corn and

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Will make Big Money for careful feeders. If you want impartial testimony, asks Prof. Plumb, then write us for Free Sample and Prices.

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Cash every
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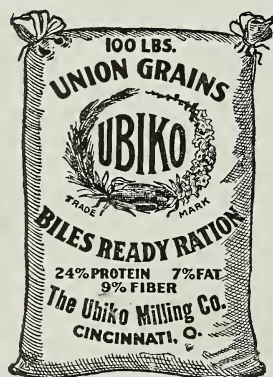
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“Quality in Feed Is Economy in Feeding”



UNION GRAINS is nothing but a scientific mixture of pure feeds. It has the **strength, bulk, variety** and **palatability** necessary to produce maximum milk flow and keep the cow healthy.

UNION GRAINS is used on herds belonging to the U. S. Government—on state institutional farms everywhere—by the largest dairy establishments in Ohio.

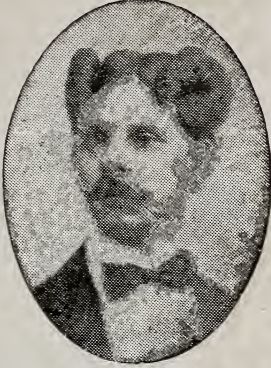
Write for sample, prices and our booklet on “Economical Feeding.”

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The Euclid Academy of Dancing

HIGH ST. AND EUCLID AVE. 5 Minutes' Walk from O. S. U.



PROF. H. J. GUERR

WEEKLY RECEPTION THURSDAY EVENINGS

BEGINNERS' CLASS

Will Organize Beginners' Class
Wednesday Evening, Feb. 23

Tuition: Gentlemen, per term of 10 lessons, \$5.00;
Ladies' per term of 10 lessons, \$4.00. Tuition can be paid
\$1.00 per week until paid.

Business and Residence Phones: Auto 8584; Bell, N. 1759.

PRIVATE LESSONS CAN BE HAD ANY HOUR, AFTERNOON OR EVENING.

Private Lessons	\$1.00
Per Term of Six Lessons.....	5.00

We guarantee to teach you to dance in one terms of Private or Class Lessons.
Academy can be secured for Private Parties, Fraternity Hops, Card Parties, Etc.
No extra charge for card tables.



At your service for choice cut
flowers, corsage work and floral
decorations.

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College Shop.

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Get back in touch with college
life by reading "Rambles 'Round
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Editor 1914-1915 Daily Lantern.
Fifty-one snappy sketches with a
punch.

Try this sample: "If steamboats
require nine feet of water to run,
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647 Neil Ave. Phones: Citz. 4431; Bell, Main 6189.

Beginners' Classes: Wednesday evening, Feb. 23rd.

Private Lessons afternoon and evening. **Juvenile Class** Saturday afternoon.

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Advance Class Monday evening.

Assembly Night Thursday evening (hall plan).

Assembly Night Saturday evening (front Hall).

Pavilion open Tuesday, Friday and Saturday (admission free).

OAK STREET ACADEMY.

827 Oak Street.

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A strictly private place for Sorority, Fraternity and Club Dances.

The Grand Prize, highest honor Panama-Pacific
Exposition awarded to the

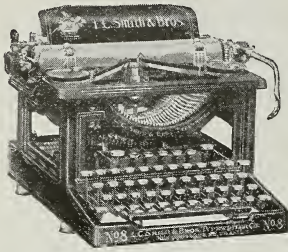


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The Student's Barber
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HIGH AND WARREN STREETS.

Advanced Class—Monday and Wednesday evenings.

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Cordial invitation extended to college and high school students. Information call

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Japs, Service Stripes and Pants Stripes Made
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aim to please.Home-made Baking, Ice Cream and Ices and
Fine Candies.**Maddox & Kilgore**

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**Hats, Shoes,
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 for College Men**

NO BETTER CLOTHES THAN

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 Few Doors South of Goodale St.**

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A standardized coal-tar
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Use Zenoleum: Get more milk; more pork; more wool
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Special March
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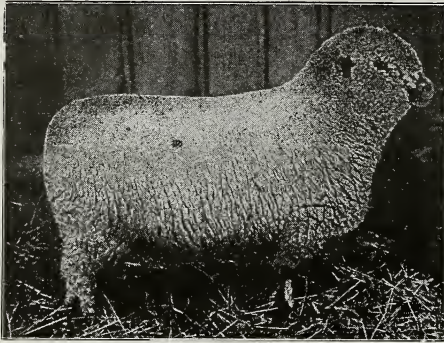


Perfect machines only of
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two color ribbon, ball
Bearing construction—
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PATASKALA, OHIO.

We have some extra good home bred yearling rams and ewes bred to Imported Tanner or Butter rams which we will offer at reasonable prices for fall delivery. Come and look over our flock, on Newark Traction line, near Wagram Stop.

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DIXIE BRAND

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Tagged 38.62 to 43% Protein.

BULL BRAND

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Tagged 41 to 43% Protein.

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(Average)

Tagged 38.62 to 41% Protein.

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MAPLECREST BREEDS THE BEST

OUR RECORDS PROVE IT

Name of Cow.	Length of Record, 365 Days.	Lbs of Butter 80 % Fat.
Banostine Belle De Kol.....		1,322.92
High-Lawn Hartog De Kol.....		1,247.92
Maplecrest Pontiac Flora Hartog.....		1,232.63
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All of these great cows were bred, reared and developed at Maplecrest Farm

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The Texas champion cow, Pauline Calamity Burke, is the champion officially tested milk cow of Texas, with a record for twelve months of 16,384.9 pounds of milk and 655.45 pounds of butterfat. She was three years old and had just dropped a calf when the test started. This registered purebred Holstein cow by her performance indicates the possible profit from dairy farming in the Lone Star State, as her total feed cost was \$103.51 and net income \$635.83, not counting, of course, labor and depreciation. Investigate the big "Black-and-Whites."

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Do not take our word for it, but write to the N. J. Exp. Sta., New Brunswick, N. J., for a copy of Bulletin No. 204, which shows in a 60-day test 500 lbs. Distillers' Dried Grains produced 65 lbs. milk—4.06 lbs. more butter fat than 650 lbs. Gluten Feed. A ton of Three D Grains will cost you fully \$5.00 less than 2600 lbs. Gluten Feed, and will produce about \$5.00 more milk or butter. Every ton you feed is

\$10.00 More Profit for You

Gluten Feed averages 29.5% protein and fat combined, Eagle 3 D Grains averages 46½% protein and fat combined, or one-half as strong again as Gluten Feed.

After feeding several cars of Corn Three D Grains, J. N. Wisner, Warwick, N. Y., writes: "Before feeding your D. D. D. Grains I was feeding Buffalo Gluten and Wheat Food, changed to the Grains and Wheat Feed, and my cows increased in their flow perceptibly—nearly forty quarts of milk. I was milking thirty cows.

Analysis and actual feeding tests prove our claims. Ask your feed dealer for Three D Grains, or if he will not supply you, write us for prices in any amount from 500 lbs. up.

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Rats and Mice Eat the Meat Out of Oats and Corn and Horses Get the Husk



CAUGHT 51 RATS ONE WEEK

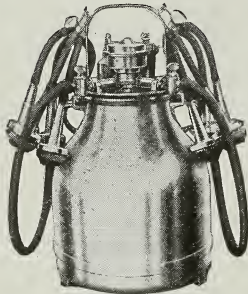
Trap resets itself; 22 inches high. Will last for years. Can't get out of order. Weighs 7 pounds. Twelve rats caught one day. Cheese is used, doing away with poisons. This trap does its work; never fails and is always ready for the next rat. When rats and mice pass device they die. Rats are disease carriers; also cause fires. These Catchers should be in every school building. Rat catcher sent prepaid on receipt of \$3. Mouse catcher, 10 inches high, \$1. Money back if not satisfied.

H. D. SWARTS, Inventor and Manufacturer Universal Rat and Mouse Traps,

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How Many Cows Can You Milk in An Hour?

With two B-L-K Milkers one man can milk 26 cows in an hour



Burrell (B-L-K) Milkers

They are easy to handle and great money savers. Dust and dirt cannot get into the machines at milking time and they are easily kept clean and sterile.

If you are interested in high grade milk and a method of reducing your milking cost, write today for our

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It gives you valuable information on producing certified milk easily and in the cheapest way.

Drop us a postal today. The booklet is Free.

D. H. BURRELL & CO.

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Manufacturers also of "Simplex" Cream Separator and other "Simplex" specialties—"The Best in the World."

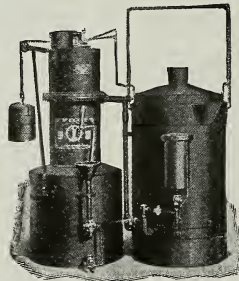
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SUPPLY A CITY CONVENIENCE TO COUNTRY HOMES

A simple, automatic gas machine, producing the most beautiful light in the world. Cheaper than kerosene. Installed in cellar or outside the house.

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Handsome ornamental chandeliers.

Barns lighted by pull of a chain—no matches needed.

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Used today in more than 250,00 Country Homes. Pilot Lighting Plants installed complete, ready for use and guaranteed. Write for estimate.

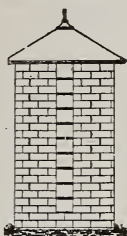
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Perfect Reinforced Cement Silos

Storms, wind and weather cannot destroy "Perfect" Silos. Made of everlasting cement blocks, reinforced with wire and steel rods. Absolutely fireproof. Guaranteed not to crack. Write for illustrated, descriptive booklet giving the opinions of leading farmers and dairymen.

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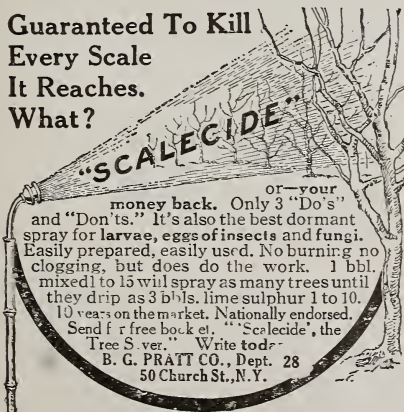
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High Grade Cottonseed Meal

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It Reaches.
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Made from APOLLO-KEYSTONE Copper Steel Galvanized Sheets, the most durable, rust-resisting sheets manufactured.

These sheets are unequalled for Silos, Culverts, Tanks, Roofing, Siding and all exposed metal work. Look for the Keystone. Send today for our "Better Buildings" booklet.

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ENTIRELY a new book—new chapters—tells facts about every type of silo—home made, stave, brick, cement, tile, metal, pit, etc. Tells best for your needs—impartial suggestions for making most profits. 264 pages—10 page index—Copyrighted Nov. 1914, covers 41 silage crops. Send for new book; it beats all previous editions. Write today. Mailed for 10c. Mention this paper. Silver Mfg. Co., Salem, O.

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As to there being an equitable adjustment of cleaning service and cleaning cost in

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Wyandotte
dairyman's
Cleaner and Cleanser

no one will dispute, at least no one who has ever given it a thorough and fair trial. You owe it to yourself to investigate Wyandotte Dairyman's Cleaner and Cleanser if you have not already done so.

Ask your dealer or write your regular dairy supply house.

The J. B. Ford Co., Sole Mfrs., Wyandotte, Mich.

This Cleaner has been awarded the highest prize wherever exhibited.

It Cleans Clean.

Heavy Mail at Hickory, N. C.



**International
Harvester
Cream
Separators
Lily—Primrose**

DO you realize the great interest there is in modern, profit-building dairy methods just now? At a big Farmers' Union Meeting, comprising 18 counties in North Carolina, 20 of our booklets, "Facts and Figures on Dairying," were passed through the crowd from man to man. Those desiring copies were asked to write to the Catawba Creamery, Hickory, North Carolina.

In 25 days, 462 requests for booklets were received.

Farmers are realizing that three cows with a good cream separator are as profitable as four without one. A good separator is one that gets all the cream down to one drop in each gallon of skim milk. That's efficiency—and that's the reason for the popularity of **International Harvester separators, Lily and Primrose.**

Lily and Primrose separators skim to this fine standard for years, because they are built on a sane design, strong, simple, reliable, sanitary. The few easy adjustments necessary, anyone can make. The single automatic oiling arrangement takes care of every bearing and sidesteps trouble.

"Facts and Figures on Dairying" will help you, too. Write for it and for a catalogue. See the **I H C** dealer who can furnish you with a **Lily** or a **Primrose separator.**

International Harvester Company of America

(Incorporated)

CHICAGO

USA

Champion Deering McCormick Milwaukee Osborne Plano



Corn Roots As They Are— An Actual Photograph

The only one of its kind. Taken ten days after the last cultivation, showing the upper brace roots, lower brace roots and the long roots which feed and develop the stalk and ear growth.



CORN ROOTS PRODUCED BY TOWER CULTIVATION.

A steel plate was drawn four inches below the surface under a full grown, well developed stalk. The plant with several hundred pounds of dirt attached was then lifted out and immersed in water and the dirt slowly washed away from the roots, leaving them in the position they occupied in the ground. Only about sixty per cent. of the roots are shown, as it was necessary to cut down on one entire side of the stalk in order to get the steel plate under it.

The upper brace roots are the strongest and come last. They are for the purpose of supporting the stalk on the ear. The next lower are the brace roots, which support the plant while it is from two to four feet high. The lowest set are the roots which nourish the stalk and ear; they are all within four inches from the surface and are twenty inches and more in length.

Save the Roots---Increase the Yield

This photograph shows how to increase the yield, as Deep Shovel Cultivation cuts off the roots, shuts off the nourishment and stunts the plant.

Can you not see this plainly?

Surface cultivation kills the weeds, conserves the moisture, saves the roots, makes the corn ripen earlier and increases the yield per acre.

You are assured of clean, productive fields every time if you use the TOWER SYSTEM OF SURFACE CULTIVATION.

THE J. D. TOWER & SONS CO.

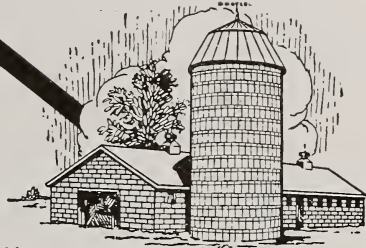
MAKERS OF

TOWER CULTIVATORS

MENDOTA, ILL.

Settle the Silo Question

—and settle it for good. Do away with repairs, with tightening of lugs and adjusting of hoops. *Know* that your silo won't blow over. Be sure of perfect silage at all times, Build the worryless, efficient



A Natco Silo and a Natco Barn mean Permanency and Prosperity.

Natco Everlasting Silo

"The Silo that Lasts for Generations"

Its hollow, vitrified, clay tile are impervious to air and moisture—they preserve the silage *sweet and juicy*. The dead air spaces in the wall resist frost—making it the silo for severe climates. The continuous, reinforcing bands laid in the mortar hold it in a grasp of steel. It is a silo of *efficiency*, and a silo you'll be proud of. Send for our silo catalog describing it fully.

Also get our splendid new book, "Natco On The Farm," describing other farm buildings made of Natco Hollow

Tile and just as efficient. Both books free. We

have many farm building plans to submit, and

will help you solve your building

problems, free. What are you

going to build? Let's hear

from you. Write today.

National Fire Proofing Company

1132 Fulton Building
Pittsburgh - - Pa.

23 Factories—Prompt Shipments.



Natco Silo Wall.
Notice steel reinforcing bars laid in the channel.

4 H.P. Cushman Weighs Only 190 lbs. 8 H.P. 2 Cylinder Only 320 lbs.

These are the only light-weight farm engines. High speed and throttle governor, with perfect balance, give smooth, continuous flow of power and uniform speed instead of violent, irregular explosions and fast and slow speeds of old-style engines. This explains why Cushman engines are so light in weight, yet more steady-running and more durable than engines weighing four or five times as much.

Only All-Purpose Farm Engines

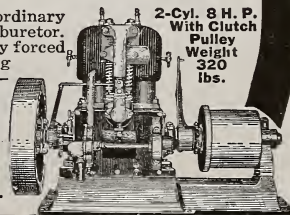
Besides doing all regular jobs, Cushman Engines may be used for so many jobs heavy engines cannot do. 4-H. P. is original binder engine, also used on corn binders and potato diggers. 8 H. P. used on hay balers, corn pickers, etc. 15 H. P. weighs 780 lbs.; 20 H. P. only 1200 lbs., for heavy duty.

Cushman equipment is much superior to that of ordinary farm engines. Friction Clutch Pulley and Schebler Carburetor. 20 H. P. has gear-driven high tension Magneto. Cooled by forced water circulating system, permitting all-day run. Moving parts enclosed and run in bath of oil. Run at any speed—speed changed while running. If you want a real farm engine, to run without trouble and do all your work, you need the Cushman. Book free.

Cushman Engines are not cheap, but they are cheap in the long run.

CUSHMAN MOTOR WORKS

926 No. 21st Street, Lincoln, Neb.



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WHY CO-OPERATION PAYS MOST MONEY FOR CREAM

Because We Pay the Freight and Give the "Tenths"

See the value of the "Tenths" to William J. Ayers, Morrow, O., who shipped us during November, 1915, as follows:

With the "Tenths" Counted.					Same Without "Tenths" Counted.				
		Cream	Test	Fat			Cream	Test	Fat
November	1...	39.5	24.2	9.55	November	1...	39	24	9.36
"	5...	37.4	24.2	9.05	"	5...	37	24	8.88
"	10...	35.8	23.0	8.23	"	10...	35	23	8.05
"	15...	39.9	22.6	9.01	"	15...	39	22	8.58
..	20...	40.7	26.5	10.78	"	20...	40	26	10.40
"	26...	39.6	22.8	9.02	"	26...	39	22	8.58
				<hr/>					<hr/>
				55.64					53.85

Mr. Ayers' "Tenths" gained him 1.79 pounds of fat, worth \$0.53. We paid "Freight" back to him on 6 cans at 15c, equal to \$0.90.

We sent him a check for \$17.53. \$17.53 divided by 53.85 equals 32.5c. At Elgin average price, his "Tenths" and "Freight" paid him 32.5 minus 29.9c, equals 2.6 cents above Elgin. **SHIP US YOUR CREAM.**

The West Jefferson Creamery Company

COLUMBUS, OHIO—ZANESVILLE, OHIO.



COLUMBUS, OHIO.



Why Suffer Losses from Hog Cholera?

For prevention, use "544."

If your herd has been exposed, is infected and sick with cholera, treat them with "544."

"544" is a chemical substance—not a serum or virus—and is administered hypodermically.

No dangers of producing abscesses—of new centers of infection—of abortion—of stopping growth or development.

Another good endorsement below:

Cherokee Co., Iowa, July 25, 1915.

The Thiele Laboratories Co., Columbus, Ohio.

Dear Sirs:—I am writing you in regard to your treatment, Thiele's "544."

I have been with the hog cholera all my life from boyhood. I have seen when we have raised the nicest bunch of hogs, that dreaded disease, cholera, come and take them away without asking you to say yes or no. In the year 1913, I was taking care of both herds, father's and mine. We had the best we ever owned, and cholera came and we had the time of our lives, when cholera put the poison in their blood and called them to their resurrection. Our work then was to set the dreaded disease on fire, ashes to ashes and dust to dust.

Now, I want to say right here. I had one sample pair, \$500.00 each; what did cholera do?—took them for almost nothing.

In 1913, I called the Assistant State Veterinarian out. He could not do anything for me. I says to myself, I will have to be my own doctor, I guess. So I have been studying for a Vet in my spare time.

I have been using serum and virus for a short time and know what it will do, but was not quite satisfied with it. When I would buy a few pigs I would have to vaccinate them right away or cholera would get them. Why, cholera was under their feet all the time.

When I first saw and heard of your treatment, I stood and looked and says, "I am going to do it." I believe I was the first to use it in northern Iowa. What I will say, I have lost hundreds of dollars by cholera serum and virus, I have lost not one cent with Thiele's "544." The sick ones are now brought back to earth with Thiele's "544" instead of going to their resurrection.

My herd numbers over one hundred now, protected with Thiele's "544," the saver of your swine.

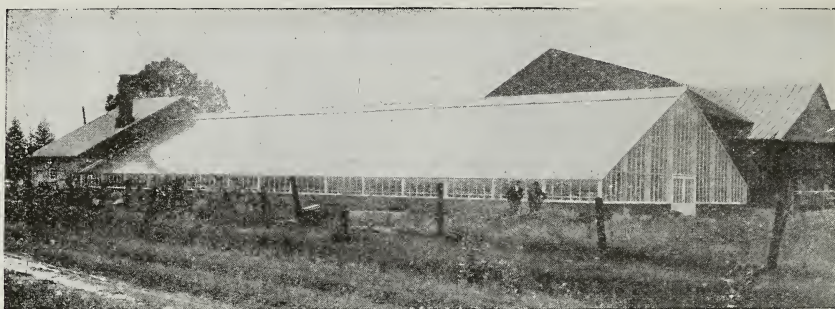
I believe the serum and virus has seen its days, which are getting shorter as the years roll on.

J. L. RADDLE.

If interested, or further information is desired, write for free booklet to

THE THIELE LABORATORIES CO.

407 Hartman Building, Columbus, Ohio.



Are You Going to Let This Woman Beat You in Business?

SHE lives in Southboro, Mass. Her father died, leaving her a home, two thousand dollars, and an acre of land. Did she start taking boarders or become the village seamstress? Not a bit of it.

She promptly made up her mind to make that acre yield her a liberal living; and each year tuck away a snug sum in the bank.

She promptly got in touch with our Boston office, and in quick order had plans, specifications and an estimate for two of our greenhouses, each 30x151 feet.

Then she went to one of the "Old money bags" of the town and told him what she proposed to do, and asked for a loan equal to her heritage. She had

every detail of the scheme so carefully thought out, and so logically presented that the money was promptly forthcoming.

In two months the houses were up, a good responsible grower employed, carnation plants bought and planted, and the business in full swing. Her first year yielded a most convincing profit. Today her carnations bring a premium in the Boston market.

To line up her success would be to say: She does whatever she does just a little better than the other fellow. And that, after all, is the keynote of any success.

Don't this woman's results start your thoughts greenhouseward? Want facts and figures? Don't hesitate to ask us any and all the questions you want.

Lord & Burnham Co.

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Royal Bank Bldg.

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FACTORIES:

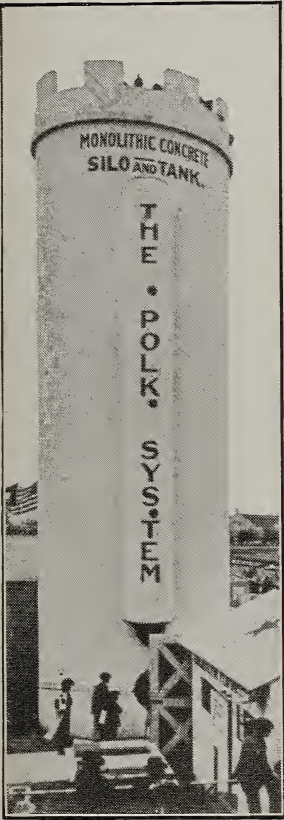
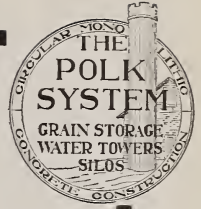
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"They are not built of pieces
and they cannot go to pieces."

1. A POLK SYSTEM monolithic concrete silo on your farm will increase the efficiency of your corn crop 40%.

2. Besides providing your cattle with an appetizing, succulent food throughout the winter months, it will make and keep them healthy.

3. It will enable you to keep on feeding YOUR stock when less thoughtful farmers have run short on feed and are forced to sell at a loss.

4. A POLK SYSTEM silo will give you a return of 6% on an investment of \$5000 for an actual expenditure of less than one-tenth of \$5000.

5. It will keep on giving you this return as long as you live—and longer.

6. It will give you 100% satisfaction; for it will never warp, rot, crack, burn, blow over, nor waste away.

**There ought to be a POLK
SYSTEM SILO on your farm.**

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Polk Genung Polk Co., Fort Branch, Indiana

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